

INDIANA VOCATIONAL TECHNICAL COLLEGE

GENERAL CATALOG

**1971
1972**



INDIANA VOCATIONAL TECHNICAL COLLEGE



THE STATE COLLEGE SYSTEM OF REGIONAL TECHNICAL INSTITUTES

GENERAL CATALOG

1971 – 1972

CENTRAL OFFICES

333 North Pennsylvania Street • Indianapolis, Indiana 46204



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Welcome to Indiana Vocational Technical College. Your decision to continue your education speaks well of your maturity and foresight. Now, more than ever before, society and technology require useful and responsible citizens.

The faculty and staff of I V Tech stand qualified and ready to assist you as you pursue the challenge of an occupational education. We hope that you, in turn, will share with us your talents, ideas, and above all, enthusiasm to learn, to participate and to do.

This College is an open-door institution of higher education. By this we mean that we strive to serve all citizens and communities of this state that are in need of occupational education opportunities. The door to this College is always open and a welcome sign is always extended to those who wish to learn.

As you progress through your classwork at I V Tech, at whichever regional institute you choose, it is our hope that you will achieve a greater understanding of the world beyond, around and within you, as well as mastery of those skills which will allow you to enter your chosen occupational field.

There is no greater pride that man can take than in the realization that he possesses knowledges and skills that are of value to society.

Harry A. McGuff
President

FOUNDED 1963

CHAIRMAN OF BOARD

Dr. Montague M. Oliver

Associate Professor of Biology
St. Joseph's College
Calumet Campus
Gary, Indiana

VICE CHAIRMAN

Maurice J. Ferriter

Vice President
Purdue National Bank
Lafayette, Indiana

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Indianapolis, Indiana

MEMBERS

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Indianapolis, Indiana

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Evansville, Indiana

Mrs. Thelma J. Lain

President Lain Technical Institute of Indianapolis
and Evansville
Indianapolis, Indiana

John K. Loughlin

State Superintendent of Public Instruction
Indianapolis, Indiana

INDIANA VOCATIONAL TECHNICAL COLLEGE REGIONAL TECHNICAL INSTITUTES

- I Northwest Technical Institute**
1440 East 35th Avenue
Gary, Indiana 46409
Telephone 219/887-9646

- II St. Joseph Valley Technical Institute**
1534 West Sample Street
South Bend, Indiana 46619
Telephone 219/289-7001

- III Northeast Technical Institute**
1711 Maumee Avenue
Fort Wayne, Indiana 46803
Telephone 219/742-1162

- IV Tippewa Technical Institute**
2316 South Street
Lafayette, Indiana 47904
Telephone 317/447-5061

- V North Central Technical Institute**
3717 South Reed Road
Kokomo, Indiana 46901
Telephone 317/453-5880

- VI East Central Technical Institute**
700 South Council Street
Muncie, Indiana 47305
Telephone 317/289-2291

- VII Wabash Valley Technical Institute**
Rural Route 22 — Box 450
Terre Haute, Indiana 47802
Telephone 812/299-1121

- VIII Mallory Technical Institute**
1315 East Washington Street
Indianapolis, Indiana 46202
Telephone 317/632-8421

- IX Whitewater Technical Institute**
710 Northwest 5th Street
Richmond, Indiana 47374
Telephone 317/966-5944
- X White River Valley Technical Institute**
646 Franklin Street
Columbus, Indiana 47201
Telephone 812/372-9925
- XI Ohio Valley Technical Institute**
107 West Main Street
Madison, Indiana 47250
Telephone 812/265-2580
- XII Lincolnland Technical Institute**
402 Court Street
Evansville, Indiana 47708
Telephone 812/425-4368
- XIII George Rogers Clark Technical Institute**
1611 East Oak Street
New Albany, Indiana 47150
Telephone 812/945-2643

STATE COLLEGE ADMINISTRATIVE OFFICE

Indiana Vocational Technical College
333 N. Pennsylvania Street
Indianapolis, Indiana 46204
Telephone 317/639-3363

FORMER COLLEGE PRESIDENTS AND INTERIM DIRECTORS

Dr. Jack M. Ryder, interim director

Robert E. Martin, interim director

Frederic M. Hadley, president

FORMER TRUSTEES

George Bannister

W. M. Dalton

George F. Gilligan

Eldon F. Lundquist (first chairman, Board of Trustees)

Helen J. Morris

Glenn W. Sample (former chairman, Board of Trustees)

Dallas W. Sells Jr.

Edward W. Towns

W. Henry Walker

Richard D. Wells

William E. Wilson

FORMER REGIONAL DIRECTORS

Huston C. Isaacs, Director Emeritus,
Wabash Valley Technical Institute

GENERAL COLLEGE STAFF

OFFICERS

- Harry A. McGuff President
Indiana Central College, B.S.; Indiana University, M.B.A.;
Indiana University, M.S.; Indiana University, D.B.A.
- James W. Commons Vice President of Administration
Marquette University, B.S.; Indiana University, J.D.
- William C. Jackson Vice President Special Services
Purdue University, B.S.
- Bruce V. Mitchell Dean of Technical Education
Indiana Central College, B.S.; Indiana University, M.B.A.
- Austell O. Sherard Dean of Vocational Education
South Carolina State College, B.S.;
Wayne State University, M. Ed.

ADMINISTRATION

- Burke E. Anderson Manager, Property and Equipment
Franklin College, A.B.; Indiana Central College, M.A.
- Gail E. Besket Research and Library Coordinator
Pennsylvania State University, B.A.;
University of Washington, M.L.S.
- John J. Birdcell Director of Research
Franklin College, A.B.; Indiana University, M.S.
- Donald H. Bryan Director of Student Personnel Services
Butler University, B.S., M.S.
- Isaac A. Charlton Business Manager
Eastern Illinois University, B.S.; Indiana University, M.S.
- Albert P. Coffin Administrative Assistant to the President
U.S. Naval Academy, B.S.
- Mary H. Hume Assistant to the President
Washburn University, A.B.; Wm. Voelker School of
Medical Technology, M.T. (ASCP)
- James R. Lansing Director, Data Processing
Indiana Central College, B.S.
- Graham M. LeStourgeon Director of Information Services
Louisiana State University, B.S.
- Norma M. Scheall Asst. Director of Information Services
Central Michigan University

James P. Sperlik Accountant
Loras College, B.A.

Terry C. Volpp Audio Visual Designer
Indiana Central College

Corinne W. Walker Director, General Studies and
Developmental Education — Indiana University, A.B., M.S.

Stephen L. Weaver Asst. Director of Student Personnel
Services — Purdue University, B.A.; Ball State University, M.A.

REGIONAL ADMINISTRATIVE STAFFS

REGION I

Northwest Region

Ola P. Thorne Director
Indiana University, M.S.

Herlindo G. Betancourt Assistant Director for
Northwest Region and Assistant Director for Instruction —
Indiana University, M.S.

Louise League Assistant of Student Affairs

Daniel Leman Business Manager
Ball State University, B.S.

REGION II

St. Joseph Valley Region

Richard M. Wysong Dean
Indiana State University, M.S.

Eugene R. Glod Director of Student Affairs
University of Notre Dame, M.A.

Veryl C. Stamm Director of Vocational and
Technical Education — University of Michigan, M.A.

John E. Calvert Business Manager
State University of Iowa, M.A.

Gordon C. Kennedy Director of Continuing Education
and Community Relations — University of Notre Dame

Robert O. Baughman Chairman, Electronics
Manchester College, B.A.

Dorothy Bupp Chairman, Health Occupations
Indiana University, M.S.

John G. Hemphill MDTA Coordinator
Western Michigan, M.A.

REGION III

Northeast Region

- Mearle R. Donica Director
Indiana University, M.S.
- Merland E. Beyler Director, Student Services
and Instruction — Purdue University, M.S.

REGION IV

Tippewa Region

- Alton V. Potts Director
Ball State University, M.A.
- Donald E. Huff Assistant Director
Purdue University, M.S.

REGION V

North Central Region

- Harvey S. Poling, Jr. Director
Indiana University, M.S.
- Charles J. Orem Director, Student Personnel Services
Purdue University, M.S.
- Paul R. Arnold Educational Consultant
University of Denver, M.A.

REGION VI

East Central Region

- Charles J. Faust Director
Ball State University, M.S. Ed.
- James C. Stanley, Jr. Administrative Assistant
Indiana State University, M.S. Ed.

REGION VII

Wabash Valley Region

- Richard L. Davidson Dean
Indiana State University, M.S.
- Robert E. Williams Business Manager
Indiana State University, B.S.
- F. Richard Nicoson Director, Continuing Education
Indiana State University, B.S.

Carroll G. Shaver Director of Admissions and
Student Services — University of Kentucky M.A.

Charlyn Marshall Fox Director of Education
Indiana State University, M.S.

Peter T. Ekstrom Guidance Counselor
University of Michigan, M.A.

Marion D. Smith Librarian
Southern Illinois University, M.S.

REGION VIII

Mallory Region

Warren F. Haas Dean
Purdue University, B.S.

Robert E. Cochran Director, Vocational Education
Purdue University, M.S.

Rolland G. Voris Director, Student Services
Indiana State University, M.S.

William L. Garrett Director, Continuing Education
Butler University, M.S.

Gerald I. Lamkin Business Manager and Director,
Technical Education — Indiana State University, M.S.

Maurice A. Kriese Chairman, Evening Division
Purdue University, M.S.

Eldon R. Crawford Business Manager
Indiana University, M.S.

REGION IX

Whitewater Region

Frank M. Pumerville Director
University of California, B.S.

Danny M. Tye Assistant to the Director
Ball State University, M.A.

REGION X

White River Valley Region

M. Eugene Hall Director
Ball State University, M.A.

Thomansin E. Miskus McCormick Librarian
Indiana University, B.A.

Dorothy Wray Acting Director of Admissions
Indiana University, B.A.

REGION XI

Ohio Valley Region

John J. Deady Director
Indiana University, Ed.D.

REGION XII

Lincolnland Region

George L. Utley, Jr. Director
Indiana University, M.S.

W. Glenn Wood Assistant Director
Western Kentucky University, B.S.

REGION XIII

George Rogers Clark Region

Carl F. Scott Director
Purdue University, M.S.

FACULTY

Beverly S. Acheson General Studies
Butler University, B.A.

Martha Adams General Studies
Mississippi Valley State College, B.S.

Richard L. All Graphic Arts
Indiana State University, M.S.

Karen Ambler Business
Ball State University, B.S. Ed.

Barbara F. Baldrige General Studies
State University College at Buffalo, B.S.

Aline L. Baughman Health Occupations
Indiana University, B.S.

Mary C. Bayliss Health Occupations
Indiana University School of Medicine, B.S.P.H.Ed.

Jimmie B. Beeler General Studies
Butler University, M.S.

\ Brian R. Betz General Studies
Northwestern University, M.A.

Grama K. Bhagavan	Technical Science University of Notre Dame, M.S.
Marlene Blue	Mathematics Butler University, B.S.
Timothy B. Bonbrake	Electronics Purdue University
Sammy E. Borden	Electronics Indiana State University, B.S.
James A. Breen	Business Illinois College of Optometry, O.D.
Mary J. Britt	General Studies College of St. Catherine, B.A.
Billy J. Brummett	Automotive Mechanics Indiana State University, M.S.
Mary Louise Busse	Health Occupations Ball State University, B.S.
Carol Sue Carlson	Health Occupations Michigan State University, B.S.
Larry J. Carney	Business Purdue University, B.S.
Meredith L. Carter	Data Processing Butler University, M.S.
Marilyn A. Caster	Health Sciences Indiana U., Indiana Central College
Wayne R. Clifton	Auto Body Indiana State University, M.S.
Robert L. Colcord	Electronics Milwaukee School of Engineering, B.S.E.E.
Martha J. Conner	Practical Nursing St. Anthony Hospital, Terre Haute, Indiana, R.N.
J. Rex Coopridge	General Studies Indiana State University, M.S.
Dale L. Craft	General Studies Ashland College, B.S. in Ed.
Beverly A. Crenshaw	Health Sciences Texas Woman's University, M.A.

John M. Danek	Electronics
Indiana State University, B.S.	
Marvin L. Daugherty	Data Processing
Indiana Central College	
Helen B. Davis	Business
Indiana University, M.S.	
Madlon L. Drayer	Health Sciences
St. Elizabeth Hospital School of Nursing, R.N.	
William T. Flanigan	Business
Tri-State University, B.S.	
Beverly J. Fordham	Business
Brigham Young University, B.S.	
Charles E. Fuller	Electronics
Southern Illinois University, M.S.	
Janet L. Geib	Business
Ball State University, M.A.	
Alan L. Gold	Mathematics
Morehead State University, B.S.	
Allan V. Gouker	Electronics
Tri-State University, E.E.	
Imogene K. Harris	Business
Southern University, B.S.	
Jeanette Ethel Herr	Health Sciences
IUMC X-ray School, R.T.	
Marie S. Hoey	Practical Nursing
Indiana University, M.S. Ed.	
Dolores M. Holcomb	General Studies
University of Notre Dame, M.A.	
William G. Hornyak	General Studies
Valparaiso University, M.A.	
Beverly J. Hoskins	Practical Nursing
Purdue University, B.S.	
Helen R. Jocot	Practical Nursing
Indiana University	
Deanna S. Jones	General Studies
Indiana Central College, B.S.	
Gerald G. Keene	Drafting
Indiana State University, B.S.	

Ruth V. Kellar General Studies
University of Colorado, B.A.

Merrell T. Kenworthy Mathematics
Massachusetts Institute of Technology, B.S.

Kenneth E. King Mathematics
Indiana University, B.A.

Merrill D. Kissick Business
Indiana University, M.S.

Deanna D. Klosinski CLA Program Supervisor and
Health Occupations Instructor — Indiana State University, B.S.

Ronald D. Koble Health Occupations
Community Hospital School of Nursing, A.R.I.T.

Margaret E. Lambuth Practical Nursing
St. Elizabeth School of Nursing, R.N.

Susan Lapworth General Studies
Indiana State University, M.A.

Elizabeth J. Laws Acting Director of Practical
Nursing Program and Instructor — St. Francis Hospital,
Fort Wayne, B.S.N.E.

Celinda K. Leach Health Occupations
University of Tennessee

John T. Lee Drafting
Ball State University, B.S.

Lawrence Edgar McNay Electronics
Indiana University

Errol M. Magidson General Studies
Antioch College, M.A.T.

Jean C. Magidson General Studies
Indiana University, B.A.

Sheila E. May General Studies
Eastern Michigan University, B.A.

Margaret H. Meighen Business
Indiana State University, M.S.

Virginia Melevage Health Sciences and
Practical Nursing — University of Chicago, M.A.

John R. Miller, Jr. General Studies
Purdue University, B.S.

Franklin E. Minion Drafting
Eastern Michigan University, B.S.

Hari N. Mirchandani	Drafting
D. J. Sind College (India), B.S.	
John D. Montgomery	Data Processing
Indiana State University, M.S.	
Dale E. Mowbray	Electronics
Patsy R. Munhall	Business
Central State College (Okla.) B.S.	
Margaret V. Murphy	General Studies
Purdue University, B.S.	
Amy E. Okaro	General Studies
Purdue University, B.A.	
Helen R. Orlowski	Business
Indiana University	
John Pennington	Auto Body
Vivian Perry	General Studies
Ann L. Pesoat	Commercial Art
University of Evansville, B.A.	
Maurice O. Pride	Drafting
Indiana State University	
Frederick C. Prohl	Electronics
Purdue University	
Thomas L. Rockwell	Culinary Arts
Michigan State University, Kellogg Center	
Virginia J. Rouse	General Studies
Franklin College, B.A.	
Robert C. Ruhl	Drafting
Purdue University, M.S.C.E.	
Robert W. Ruff	Drafting
Purdue University, B.S.C.E.	
Janice L. Sagraves	Business
Indiana State University, B.S.	
Lloyd P. Scherich	Auto Mechanics
Ramona Simmonds	Health Occupations
St. Gabriels School of Nursing, R.N.	
James M. Simone	Data Processing
Indiana University	
Ivan G. Smith	Auto Mechanics

Paul R. G. Smith	General Studies
University of Notre Dame, Ph.D.	
Sidney C. Smith	Electronics
University of Louisville	
Doris M. Spencer	Practical Nursing
Indiana University, B.S.N.	
Louis A. Stanich	Drafting
San Diego State University, B.A.	
William C. Thompson	Business
Ball State University, M.A.	
Betty J. Vergon	Business
Indiana University	
Ronnie K. Watts	Drafting
Purdue University, M.A.	
Herbert A. White	Mathematics
Arkansas College, B.S.	
Julius B. Whitfield	Automotive Technology
Harold L. Wortman	Welding
Indiana State University, B.S.	
Raymond P. Zsolczai	Health Occupations
Alexian Brothers Hospital, Chicago, Illinois, R.N.	
William H. Zumbro	Business
Sacramento State University, B.S.	



OFFICIAL COLLEGE CALENDAR — 1971-1972

SPRING QUARTER — 1971

Spring Quarter Begins (New Student Orientation)	Mon	March	8	1971
Classes Begin	Tues	March	9	1971
Spring Vacation (No Classes in Session)				
School Closes End of Day	Fri	April	2	1971
School Opens	Mon	April	12	1971
Pre-Registration for Summer Quarter (5 Days)	Mon	May	24	1971
	Fri	May	28	1971
Spring Quarter Ends	Fri	May	28	1971
Memorial Day (No Classes in Session)	Mon	May	31	1971
Official Summer Registration (3 Days)	Tues	June	1	1971
	Thurs	June	3	1971
Late Summer Registration Ends	Fri	June	11	1971

SUMMER QUARTER — 1971

Summer Quarter Begins (New Student Orientation)	Mon	June	7	1971
Classes Begin	Tues	June	8	1971
Independence Day (No Classes in Session)	Mon	July	5	1971
Pre-Registration For Fall Quarter (5 Days)	Mon	Aug	16	1971
	Fri	Aug	20	1971
Summer Quarter Ends	Fri	Aug	20	1971
Official Fall Registration (3 Days)	Mon	Aug	23	1971
	Wed	Aug	25	1971
Late Fall Registration Ends	Fri	Sept	10	1971

FALL QUARTER — 1971

Fall Quarter Begins (New Student Orientation)	Fri	Sept	3	1971
Labor Day (No Classes in Session)	Mon	Sept	6	1971
Classes Begin	Tues	Sept	7	1971
Pre-Registration for Winter Quarter (5 Days)	Mon	Nov	15	1971
	Fri	Nov	19	1971
Fall Quarter Ends	Fri	Nov	19	1971
Official Winter Registration (3 Days)	Mon	Nov	22	1971
	Wed	Nov	24	1971
Late Winter Registration Ends	Fri	Dec	3	1971
Thanksgiving Vacation (No Classes in Session)	Thurs	Nov	25	1971
	Fri	Nov	26	1971

WINTER QUARTER — 1971-1972

Winter Quarter Begins (New Student Orientation)	Mon	Nov	29	1971
Classes Begin	Tues	Nov	30	1971
Christmas Vacation (No Classes in Session)				
School Closes End of Day	Mon	Dec	20	1971
School Opens	Tues	Jan	4	1972
Pre-Registration For Spring Quarter	Mon	Feb	21	1972
(5 Days)	Fri	Feb	25	1972
Winter Quarter Ends	Fri	Feb	25	1972
Official Spring Registration	Mon	Feb	28	1972
(3 Days)	Wed	March	1	1972
Late Spring Registration Ends	Fri	March	10	1972

SPRING QUARTER — 1972

Spring Quarter Begins (New Student Orientation)	Mon	March	6	1972
Classes Begin	Tues	March	7	1972
Spring Vacation (No Classes in Session)				
School Closes End of Day	Fri	March	24	1972
School Opens	Mon	April	3	1972
Pre-Registration For Summer Quarter	Mon	May	22	1972
(5 Days)	Fri	May	26	1972
Spring Quarter Ends	Fri	May	26	1972
Memorial Day (No Classes in Session)	Mon	May	29	1972
Official Summer Registration	Tues	May	30	1972
(3 Days)	Thurs	June	1	1972

SUMMER QUARTER — 1972

Summer Quarter Begins (New Student Orientation)	Mon	June	5	1972
Classes Begin	Tues	June	6	1972
Independence Day (No Classes in Session)	Tues	July	4	1972
Pre-Registration For Fall Quarter	Mon	Aug	14	1972
(5 Days)	Fri	Aug	18	1972
Summer Quarter Ends	Fri	Aug	18	1972
Official Fall Registration	Mon	Aug	21	1972
(3 Days)	Wed	Aug	23	1972
Late Fall Registration Ends	Fri	Sept	8	1972

FALL QUARTER — 1972

Fall Quarter Begins (New Student Orientation)	Fri	Sept	1	1972
Labor Day (No Classes in Session)	Mon	Sept	4	1972
Classes Begin	Tues	Sept	5	1972
Pre-Registration For Winter Quarter (5 Days)	Mon	Nov	13	1972
	Fri	Nov	17	1972
Fall Quarter Ends	Fri	Nov	17	1972
Official Winter Registration (3 Days)	Mon	Nov	20	1972
	Wed	Nov	22	1972
Late Winter Registration Ends	Fri	Dec	1	1972
Thanksgiving Vacation	Thurs	Nov	23	1972
(No Classes in Session)	Fri	Nov	24	1972

WINTER QUARTER — 1972-1973

Winter Quarter Begins (New Student Orientation)	Mon	Nov	27	1972
Classes Begin	Tues	Nov	28	1972
Christmas Vacation (No Classes in Session)				
School Closes End of Day	Fri	Dec	15	1972
School Opens	Mon	Jan	2	1973
Pre-Registration For Spring Quarter (5 Days)	Mon	Feb	19	1973
	Fri	Feb	23	1973
Winter Quarter Ends	Fri	Feb	23	1973
Official Spring Registration (3 Days)	Mon	Feb	26	1973
	Wed	Feb	28	1973
Late Spring Registration Ends	Fri	March	9	1973



PHILOSOPHY

Indiana Vocational Technical College believes that each individual, regardless of economic or social status, should be provided the opportunity to develop to his and society's ultimate benefit. The College provides occupational education at its regional institutes which are located throughout the state so as to be of reasonable access to all citizens.

The College believes that occupational education is an increasing necessity for an ever-growing portion of the citizens of Indiana. IVTC reflects and complements the intent of the General Assembly of Indiana by providing occupational education resulting in definable job skills.

IVTC believes in general education integrated throughout the occupational curriculum. The general education core of studies is coordinated through several disciplines to lead the student toward self-awareness, toward a sense of social integration, and to recognition of his place in shaping society.

The College believes its students to be important functioning members of their communities and directs its programming to develop a spiritual and physical bond between students and society.

From this philosophical base, the following objectives are established for the Indiana Vocational Technical College system:

1. To meet the needs of the residents of the state for post-high school vocational and technical training and retraining.
2. To provide a community-oriented system of regional technical institutes emphasizing occupationally-oriented educational opportunities not available publicly or privately in sufficient numbers to meet the needs of residents and/or employers.
3. To offer (1) vocational and technical education programs that are occupationally oriented, and (2) general education programs necessary to complement the requirements of specific vocational and technical skills.

4. To ensure that acceptable skill and knowledge levels are attained by students certified as graduates of Indiana Vocational Technical College.
5. To develop an understanding and appreciation for occupational preparation and individual pride in the possession of such skills and knowledge.
6. To provide the opportunity to attain occupational competence compatible with the individual student's interests and abilities regardless of financial ability or previous education experiences.
7. To provide guidance, evaluation, counseling, and placement services for students to meet the needs for sound and practical occupational selection, preparation, and placement.

COLLEGE EXPENSES

fees

The Indiana Vocational Technical College seeks to provide quality training opportunities at the lowest possible cost. As a state assisted educational institution of Indiana, fees paid by the student cover only a minor part of the operating costs of the College and its regional institutes.

Free tuition is granted to all students who are residents of the State of Indiana. All non-resident students are required to pay a tuition fee in addition to the General Service Fee.

Schedule of Fees (Per Quarter)

Residents of Indiana

For 10 credit hours or more	
General fee	\$100
Lab fee where applicable	
For less than 10 credit hours	
General fee per credit hour	\$ 10
Lab fee where applicable	

Non-Residents of Indiana

For 10 credit hours or more	
Tuition	\$100

General fee	\$100
Lab fee where applicable	
For less than 10 credit hours	
General fee per credit hour	\$ 10
Tuition per credit hour	\$ 10
Lab fee where applicable	

withdrawals from college or courses

A student is not considered officially withdrawn until he has completed and filed the necessary withdrawal forms at the Admissions Office. Any withdrawal other than an official withdrawal does not permit the refund of any tuition or General Service Fee and may deprive the student of an opportunity to resume his education at a later date.

Any student who is dismissed for non-academic cause or misconduct shall not be entitled to any refund.

laboratory and breakage fees

Fees are determined on an individual laboratory basis for each course requiring such assignments. Monies derived from these fees are used to replace the special expendable supplies required in laboratory activities. The College charges no breakage fee or property damage fee to students, but in case of breakage due to gross negligence or maliciousness, the student shall be expected to reimburse the College. Credits may be withheld until proper payment is made.

student activity fee

A student activity fee will be charged each student. The proceeds of the fee will remain in the College and will be budgeted to support non-curricular educational and recreational activities. These activities include such functions as publications, speakers, special convocations, and various programs of recreation and entertainment including intramural sports.

All fees are payable at the time of official enrollment in the College and are subject to change by the College Board of Trustees at the beginning of any school quarter. If it becomes necessary to make such adjustments in fees, the College will attempt to give reasonable notice.

FINANCIAL AIDS

The goal of the College in promoting a Financial Aid Program is the removal of economic barriers to higher education among the able people of all income groups of our society.

To accomplish this objective Ivy Tech has developed a variety of financial aids to assist students in overcoming economic problems associated with college attendance.

Ivy Tech participates in the College Scholarship Service (CSS) of the College Entrance Examination Board. Participants in CSS subscribe to the principle that the amount of financial aid granted a student is based on financial need. The CSS assists colleges, universities, and other agencies in determining the student's need for financial assistance.

veterans

The Indiana Vocational Technical College and its regional institutes have been approved for veteran training. A veteran enrolling in IVTC must make application for a certificate of eligibility directly to Veterans Administration Regional Office, 36 South Pennsylvania Street, Indianapolis, Indiana, 46204. Local VA offices may be located near a regional institute where assistance may be obtained in making application.

Educational benefits for orphans of veterans and vocational rehabilitation of veterans are also processed by these VA offices. Certificates of eligibility must be received by the student before official enrollment is permitted. Applications for eligibility should be made with the VA office at least 30 days prior to the date the student is to enroll.

mdta students

For students enrolling under the sponsorship of the Manpower Development and Training Act, (MDTA) final approval from the local office of Indiana Employment Security Division as the authorizing agency must be received before final enrollment and class attendance may begin. Students seeking training under this program must make their application at least 30 days prior to the date

the college quarter is to begin or the course is to start. An official college or regional institute application for admission must be submitted with the request for training to the local employment security office.

the work-study program

The federal Work-Study Program, originally part of the Economic Opportunity Act of 1964, was in 1965 added to the Higher Education Act. Preference is given to students from low income families who need a job to help pay for college expenses.

Under this program, students work on campus or in the community performing jobs in the public interest. While they may work no more than fifteen (15) hours per week when school is in session, they may complete a regular forty (40) hour work week during vacation periods. To be eligible for the Work-Study Program a student must be accepted for enrollment as a full-time student.

guaranteed student loans

This loan program is designed to make it possible for students to borrow from private lenders to help pay educational costs. Up to \$1,500 per academic year may be borrowed (\$7,500 aggregate maximum) from eligible lenders. For a student whose adjusted family income is less than \$15,000 a year, the Federal Government will pay the lender the total interest due (up to seven percent) on the unpaid principal balance while the student is in school or during other periods of deferment. If a borrower dies or becomes permanently disabled, his loan will be cancelled.

Applications for loans may be obtained from banks, savings and loan associations, credit unions, pension funds, schools, colleges, insurance companies, and similar institutions which participate and qualify as eligible lenders. Students desiring loan assistance should contact their own lending institutions first. Loans are approved or denied at the discretion of the lender. State or private non-guarantee agencies, regional offices of the Office of Education, or school officials also will provide assistance.

college sponsored grants-in-aid

Beginning students and students already attending Ivy Tech are eligible for grants-in-aid offered through the college. These funds are used for students who are carrying at

least 12 credit hours or more. Grants-in-aid may be renewed if the student maintains a 2.0 grade point average. Applicants are judged on their need and academic ability. Grants-in-aid are usually awarded to cover the cost of tuition and fees.

BOOKSTORE

A bookstore is maintained at most regional institutes to make available the books and supplies needed by students. The bookstores will be open approximately one week prior to the opening of school and will remain open throughout the school year, including the summer quarter.

All books and regular supplies needed for training will be offered for sale at the bookstore. When special supplies are needed which are specifically related to laboratory requirements in a curriculum, they will be provided as part of the laboratory fee.

HOUSING AND TRANSPORTATION

Arrangements for housing and transportation are the responsibility of the individual student. The student personnel office at the regional institutes will, however, assist students in obtaining adequate housing.

ADMISSION REQUIREMENTS AND PROCEDURES

The programs and courses offered by the Indiana Vocational Technical College are available to all persons, Indiana residents and non-residents, who have passed their 16th birthday. Some programs such as practical nursing have a minimum age requirement of 18.

campus visits

Campus visits are encouraged by the regional institutes. It is recommended that an initial visit to the prospective facility be made before an application is filed.

college year

The college year begins in September and continues through August. The 12 months are divided into four quarters, exclusive of holidays and vacations which correspond to those generally recognized by other state universities and colleges. It is possible to enter some programs at the beginning of the second, third, or fourth quarter. The Evening College operates on the same quarter plan and recognizes the same calendar for registration, holidays and vacations.

If the qualifications for admission are met, the student may be admitted to some courses up to the beginning of the second week of any quarter. When such admission is granted by a regional institute, the student will be required to pay the full fees for the quarter and will be required to meet the regular course requirements by special arrangements with each instructor to receive college credit.

admission policy

Indiana Vocational Technical College is dedicated to an "open-door" admission policy. The College conceives as its purpose the provision of post-high school occupational education opportunities to all citizens who are able to profit from this instruction.

In recognition that the future of society lies in the maximum development of its human resources and believing that this resource development can be enhanced through universal access to occupational education, this College has chosen and adopted an "open-door" admissions policy. This policy means that the doors of the College are open to all above the usual high school age, and to those who have permanently withdrawn from school and are above 16 years of age.

In order to meet the needs of these students the College strives to be highly flexible in its program offerings and to provide diverse educational opportunities, to insure that individual needs are met. More specifically, the College accepts the individual at his level of preparedness and provides an opportunity to pursue an educational program toward the attainment of a career goal.

general admission requirements

Students applying for admission to the College must meet only one of the following criteria:

1. Be a graduate of a high school, or,
2. Have successfully completed a high school equivalency examination, or,
3. Demonstrated an interest in and a need for occupational education as provided by the College.

A prospective student is considered a resident of Indiana if he has resided within the state for a minimum period of six months and intends to continue in that residence.

The college admission policy makes provisions for admission of any person regardless of race, color or national origin, in accordance with Title VI, Civil Rights Acts of 1964 and operates in compliance with the law.

entrance procedure for full-time programs

1. Contact the regional institute for pre-enrollment or official application.
2. Complete the forms and return them to the regional institute.
3. Request high school registrar to mail an official transcript of credits to the regional institute. Official transcripts from any college or other post-high school institution previously attended must also be sent to the regional institute.
4. Take diagnostic aptitude and ability tests which are given at each regional institute. Notification of when tests will be given will be sent to applicants. Report for testing and personal interview at the appointed time and place.
5. Pay all fees or make final arrangements for paying fees at the time of official enrollment.
6. Provide evidence of acceptable physical condition from family physician.

EVENING COLLEGE

Class offerings in the Evening College parallel those offered during the regular day program and will earn credit and may be used to meet the requirements for technical or semi-technical certification. Requirements for admission are:

1. Submission of a general admission form at the time of enrollment in classes.
2. Payment of fees.

Students who are working toward a specific curriculum or program certification should make provisions for regular admission to the College through the Admissions Office before they have completed the equivalent of one quarter's work or 15 credit hours.

COLLEGE CREDIT

College credit is measured in quarter hours. The quarter hours of credit for each course is indicated in Section III, Course Descriptions. In general, one quarter hour of credit is intended to represent one hour of classroom instruction per week for one quarter. (The college credit value applicable for laboratory work required in each course is based on a ration of one credit hour for each two laboratory hours.)

For students devoting their full time to college pursuits, 12 to 18 credit hours per quarter constitutes a normal class load. A full-time student must carry an average of 15 credits per quarter to graduate at the end of a six quarter program. A student desiring to carry an overload must have demonstrated outstanding scholastic ability.

TRANSFER CREDIT

A student wishing to transfer from or receive credit for courses taken at another college, university or IVTC regional institute, must complete an application for admission and forward an official transcript of work completed to the regional institute admissions office.

IVTC will accept transferred credit from other colleges or universities toward a degree or certificate for those courses which carry a grade of C or better and which satisfy curricular requirements.

advanced standing

Advanced standing toward graduation may be granted any student who:

1. Has successfully completed courses applicable to his program area in another college or university or at another IVTC regional institute, or
2. Has completed courses offered by the Armed Forces Institute or other military service programs of study which are equivalent to course work offered by IVTC, or
3. Qualifies by departmental examination and is recommended for advanced standing by the admissions office.

COUNSELING SERVICE

Counseling services are available at each regional institute. These services include educational and vocational aptitude tests for students. Counselors will also help acquaint students with the community and state agencies and other resources which may be useful to the students.

As a student progresses toward the completion of a training program, there may be occasions when counseling services will be desired. Students are required to maintain a cumulative grade point average of 2.0. All students are encouraged to contact a counselor or their faculty advisor at any time.

testing

Full-time students must take the Comparative Guidance and Placement Program (CGP) which is the official college guidance and placement test. The CGP is sponsored by the College Entrance Examination Board. The CGP program is designed to help every student, regardless of his academic, financial, or social status, identify his occupational desires and abilities. The CGP will be administered monthly at each regional institute, and the fee per student is \$4.

In addition, special aptitude and proficiency tests are required in some occupational areas.

high school equivalency test program

The equivalency program makes it possible for an adult to take the General Educational Development Test (GED) to determine if he can score at the 12th grade completion

level in English, mathematics, science and social studies. If an adult is able to make the necessary scores, he is then offered the equivalency certificate. Regional institutes refer the applicant to the nearest existing organization authorized to administer the tests. He must live in the state at least six months prior to making application for the examination. Should a person fail one or several parts of the five-part examination, he should then enroll in an approved GED refresher course so as to be adequately prepared to retake the necessary tests a minimum of six months later. The nearest regional institute in the college system may be contacted for more information about the equivalency test program.

tutorial assistance

Special courses and tutorial assistance are available to students who require aid in overcoming scholastic deficiencies.

GRADING SYSTEM

Scholastic standards are maintained at a high level. Grades will be mailed to the student's home address at the end of each quarter. The following system is used to evaluate student achievement in each subject:

		QUALITY POINTS*
GRADE	QUALITY	(Per Credit Hour)
A	Superior	4
B	Excellent	3
C	Good	2
D	Poor	1
F	Failing	0
X	No Fail	Not considered in establishing student's scholastic index
WP	Withdrawal (Passing Grade)	0
WF	Withdrawal (Failing Grade)	0
I	Incomplete	0
AUD	Audit	0

*For a student to determine his quality point ratio, it is computed by dividing the total quality points received by the sum of the total credits earned. For example: A student who has earned a total of 45 college credits with all grades of "B" has a 3.0 quality point ratio.

Students who complete a prescribed curriculum vocational-technical certification with a quality point ratio of 3.60 or better will be graduated "with high honors."

The student who earns a quality point ratio of 3.25 to 3.59 will be graduated "with honors."

FACULTY

A quality faculty serves at each regional institute. In faculty selection, considerable emphasis is placed on actual experience in the area of technical specialization as well as in their academic achievement. Primary consideration is placed on the instructor's ability to convey knowledge. Faculty members are expected to maintain their professional status by keeping informed on current trends in their fields.

RECOGNITION

Indiana Vocational Technical College confers two-year associate degrees and awards occupational certificates. The College is a member of the Indiana Conference for Higher Education, the American Association of Junior Colleges, the Indiana Association of College Admissions Counselors and the Indiana Student Financial Aid Association.

The College is approved for the education of veterans and orphans of deceased veterans who are eligible for educational benefits. The College is endorsed by the Rehabilitation Division of the State of Indiana.

Courses of study and curricula for each occupational area of concentration are approved where applicable by appropriate certifying agencies, as well as by business, labor and industrial organizations.

Additional information may be obtained at the admissions office of each regional institute.

ADVISORY COMMITTEES

The Indiana Vocational Technical College curriculum is developed with the assistance and advice of area employers. Through advisory committees composed of representatives of the various employing areas, the College is kept informed of the needs of such employers, the training, types of equipment and the performance standards needed.

Advisory committees represent business, industry, commerce, agriculture and government institutions.

The advisory committees insure that programs presented by the College are adequate, up to date, and complete and that students are well equipped with employable skills.

CURRICULUM AND GRADUATION REQUIREMENTS

In each regional institute of the College, the courses of study are offered to meet the specific employment needs of business and industry in that area, as well as throughout Indiana, based on industrial growth, job potential and present and future employment needs.

To meet the general requirements of the College for graduation, the student must have a cumulative quality point ratio of at least 2.0 (average).

Candidates for graduation will be required to have earned at least one-half of the credit hours for a degree or certificate within the IVTC system. The final 15 credit hours must be earned within the College.

associate degree

To earn an associate degree, the student must complete a six-quarter program containing 90 quarter credit hours in an approved technical curriculum. Fifty credit hours must be earned in a technical area plus 15 credit hours in a technical related core. The balance of 25 credit hours must be earned in the general education core. Programs of study leading to a degree are listed in Section II.

semi-technical programs

Semi-technical course offerings are designed to assist employed, under-employed and unemployed workers and students either to increase or to update knowledge and

skills used in present employment. These courses also provide an opportunity to learn new skills for better employment. Courses may vary in length and are scheduled upon request. Certificates are awarded for specific areas of specialization within a technical or occupational curriculum. The recipient may later apply credits earned toward a technical degree.

Among course offerings are classroom instruction and laboratory work in welding, bricklaying, blueprint reading, tool and die making, and similar courses which apprentices for skilled trades may need to meet the journeyman requirements. Formalized apprenticeship training is coordinated with local industry, trade unions and the College.

continuing education

Continuing education is offered by each regional institute. These courses are organized with the cooperation of industry and business to meet a specific need within the regional area. These courses do not conform necessarily to the regular college calendar and the starting and ending dates are left to the discretion of each regional institute. Continuing education courses do not appear in the College catalog since they vary with local needs. Information regarding these continuing education courses is available at the admissions office of each institute.

These programs include courses of study which industry and business establish with the College and which provide for the student to alternate college attendance with work-related experiences.

PLACEMENT

The fundamental purpose of occupational education is to provide an opportunity for employment at a more skilled level and to provide an opportunity for advancement for those already employed. To assist in making good use of new skills developed at the College, an enthusiastic and active effort shall be made to place individuals in positions for which they have been trained. Contacts with major employers, arrangements for interviews, and liaison with Indiana Employment Security Division are provided through the job placement counselor at each regional institute.

SELECTIVE SERVICE

Full-time, draft-age students attending regional institutes generally have been assigned a deferred classification by their local Selective Service Board for the period of time they are enrolled. While indications are that the school will retain this status in the future, it should be noted that changes in manpower needs could affect the situation. Only a full-time student who maintains satisfactory grades may be eligible for a deferred classification.

STUDENT GOVERNMENT

The student has the opportunity to receive practical experience in responsible leadership through participation in extra-curricular programs such as the Student Government. The principal objective of the Student Government is to provide a student voice in the management of student activities.

RECREATION

Students are encouraged to take part in activities, sports, clubs, and special events. Regional institutes generally have game rooms or lounges and snack bar areas. Some have formed intramural athletic leagues for basketball, bowling and softball.

CONDUCT

College students are considered to be mature men and women. Their conduct, both in school and out, is expected to be dignified and honorable. The responsibility for success rests largely on the shoulders of the individual student.

The administration does not set many rules of conduct. On the contrary, it is expected that students will consider they are living in a democratic situation and that the reputation of the institution rests on their shoulders. Common courtesy and cooperation at all times make conduct rules unnecessary.

The following resolution has been adopted by the College Board of Trustees:

WHEREAS the mission of the Indiana Vocational Technical College is to teach, conduct research and serve the public through the proper use of its facilities, and personnel and irresponsible acts of individuals may militate against the effective accomplishments of the college; and

WHEREAS the unreasoning acts of a few, whether they be students, faculty members, or outsiders not connected with the college, likewise militate against the effective pursuit of education by a student; and

WHEREAS the spirit of protest and independence that is normal in students, has in the present time been evidenced by excessive opposition to established principles of law and order, by abuse of personal freedoms, by misuse of the basic rights of free speech and by the use of displays of force;

The Board of Trustees of Indiana Vocational Technical College hereby resolves:

That all basic rights of free speech and independent action of individual citizens will be preserved so long as any exercise of such rights does not infringe upon the freedoms and rights of others.

That any grievance presented in a calm and reasonable manner will be given fair and thorough consideration by the respective administrations, including Regional Boards of Trustees, and just and impartial answer will be returned with the minimum delay .

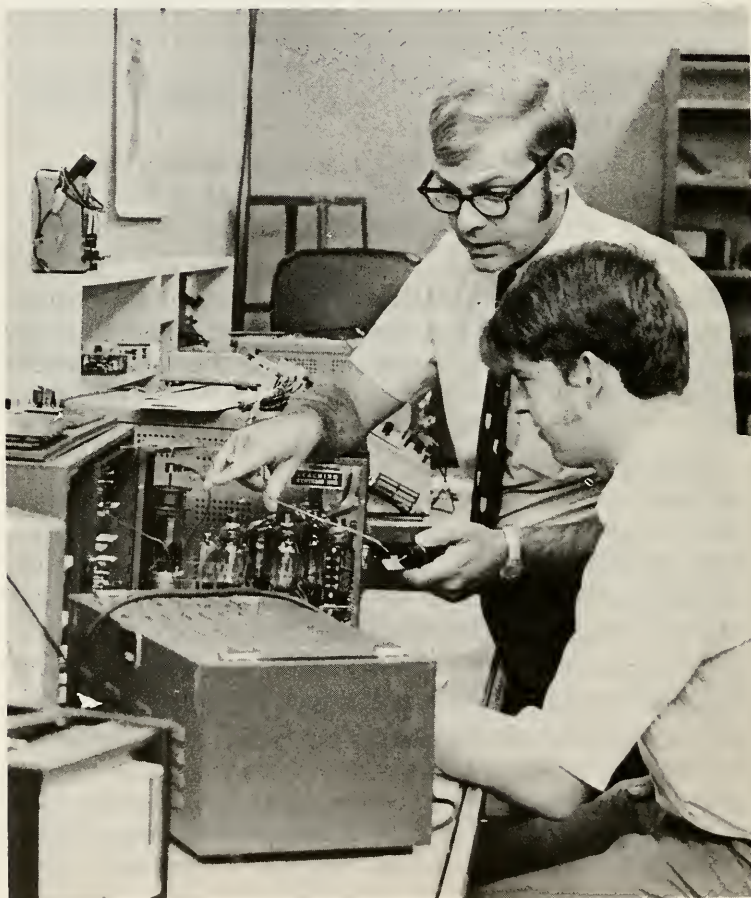
HOWEVER, any person, student, faculty member, or employee of the College who takes part in any activity which interferes with other persons' lawful use of the property of the Indiana Vocational Technical College, and regional institutes, or who performs in such manner as to have the effect of denying or interfering with the lawful use of such property by others, will be requested to leave the premises of the College or its Regional Institutions, and

If any person, student, faculty member or employee of the College refuses to leave the premises of any property of the College, when so requested, regardless of reason, by any duly constituted official of the Indiana Vocational Technical College including its Regional Institutions, then

proper law enforcement officials will be requested to arrest such persons as trespassers, and such persons will be subject to such disciplinary action by the College as the proper officials deem reasonable, including expulsion and/or termination of benefits and rights.

If any person or property is in danger of harm from any activities such as described above, that law enforcement officials will be requested to arrest such offenders and remove them from the premises.

This Resolution is hereby adopted and made a matter of corporate record, this 31st day of March, 1969.



THE CURRICULA

At Indiana Vocational Technical College, courses in General Studies are coordinated with the vocational and technical programs so students may become contributing members in contemporary society as well as in the world of work. General Studies include courses in communication skills, mathematics, science, and social science.

To broaden the student's educational base, twenty-five hours in this area are needed to meet the requirements for the associate degree in the two-year program.

To provide opportunities for students to master semi-professional, technical and semi-technical tasks, one-year programs are offered.

Tests are administered in an effort to meet the specific needs of the individual and to determine the entry level for each student.

Requirements in the General Studies Division for the Associate Degree

Communication Skills	6 hours
Mathematics	5 hours
Social Science (including courses in Human Relations, Economics and Occupational Research)	8 hours
Electives from General Studies course	<u>6 hours</u>
	25 hours

Developmental Education

Courses in Developmental Education provide the student with assistance to gain the foundation and necessary tools for learning occupational and technological materials. These courses are provided with no credit.

BUSINESS DIVISION

Business and office occupations are becoming more and more technical in nature. The introduction of sophisticated information-handling systems in modern offices has increased the demand for highly trained office technicians. In addition, the tremendous growth of American business in the past few years has created opportunities for skilled business and office personnel.

Accounting is the language of business. It is a system of keeping, analyzing and explaining commercial accounts.

Everyone preparing for a career in business needs to know how financial records and reports are established, maintained, summarized, and interpreted. A modern efficient accounting system is vital to all companies.

The Accounting Technician may establish and maintain a financial data processing system, interpret the results of recorded data to the management, and assist in making decisions based on the information.

Business programs offered by Indiana Vocational Technical College include professional accounting, a combination of accounting and management, secretarial, and marketing. A description and general qualifications of each of these programs is prescribed here. Students should check with the Business Department for possible prerequisite course requirements.

Accounting Management Technician

Leaders in business and industry need to understand accounting procedures. Supervisory and management personnel keep records, read data in financial reports, and express future business plans in financial terms.

Managers are responsible for planning and controlling all phases of a business, and it is necessary for them to have an efficient system to provide the information they need for making decisions.

The Management Technician course of study develops the student's accounting abilities and provides an understanding of business organization, operations, procedures, and management skills and techniques.

The accounting background provided by this program enables a manager to comprehend and interpret the data an accountant would supply.

A graduate of the Management Technician program is qualified for employment at the mid-management level of small businesses in the retail and wholesale fields or as a trainee in a large company with the opportunity to advance to upper levels of administrative management.

Accounting Management Technician (Associate Degree)

	Six Quarters
*General Education Core	25
Accounting 2201, 2202, 2203, 2204, 2211	20
Business 2102** , 2124, 2125, 2221, 2251, 2281, 2282, 2255, 2271, 2301, 6001, 6052, 0203	37
Economics 0500, 0501	6
Business Elective	<u>3</u>
	91 Quarter
	Credit Hours

* The general education core is listed on page 39 of this catalog.

** 2102 or Business Elective

Accounting Technician

The Accounting Technician program offers basic training which will qualify a student to enter a public accounting firm, private business or industry, or government service as a junior accountant or manager-trainee.

Opportunities for employment may be found in banks, restaurants, small businesses, hotels, motels, insurance companies, super markets, and travel organizations.

With experience, the graduate of this program may move into advanced accounting positions.

Accounting Technician (Associate Degree)

	Six Quarters
*General Education Core	25
Accounting 2201, 2202, 2203, 2204, 2211, 2212, 2222, 2223, 2231	30
Business 2281, 2282** , 6052, 2251, 2101** , 2124, 2125, 2301, 0852	29
Economics 0500, 0501	<u>6</u>
	90 Quarter
	Credit Hours

* The general education core is listed on page 39 of this catalog.

** Students may substitute a technical elective for Business 2282 and 2101 if approved by the department.

Accounting Clerical (Occupational Certificate)

	Three Quarters
General Education 0201, 0202, 0203 , 0755, 0750	13-
Accounting 2201, 2202, 2203	12
Business 2101, 2124, 2125, 2301, 2251	14
Economics 0500, 0501	<u>6</u>
	45 Quarter
	Credit Hours

Computer Technology

Business, industry and science today need fast service in the processing of data. Hand methods of processing information are being replaced rapidly by the automatic methods of the computer, and the world of data processing urgently needs men and women trained in computer technology.

This field is developing so rapidly that there are not enough trained people to fill the job openings. Sylvia Porter reported in her syndicated newspaper column that 250,000 additional jobs will open in the computer industry by 1972.

A data processing technician may fill a variety of jobs. A systems analyst develops methods for data collection, processing and reporting. His objective is to improve data processing efficiency and make the best use of available equipment.

A graduate of the data processing technician program is trained to manage all operations of an electronic data processing section in modern business and industry.

Opportunities for employment can be found in wholesale and retail business, hospitals, government agencies, insurance companies, banks, transportation, public utility companies, manufacturing firms, and distributors.

With experience, a data processing technician will be in line to advance to such positions as data processing supervisor, computer programmer, systems analyst, computer operations supervisor, programming supervisor, or systems supervisor. Both men and women will find rewarding careers in this area.

Computer Technology (Associate Degree)

	Six Quarters
*General Education Core	25
Accounting 2201, 2202, 2211	12
Mathematics 0327	5
Data Processing 2292, 2306, 2308, 2312, 2310, 2315, 2360, 2361, 2320, 2325	48
Business 2251 and Elective **	<u>6</u>
	96 Quarter
	Credit Hours

* The general education core is listed on page 39 of this catalog.

** 2311 is suggested as a Data Processing Elective.

Computer Operators

Computer operators are responsible for the smooth day-to-day operation of the machines. They load programs into the machines and monitor the computer console for possible errors. This work requires a high level of manual dexterity, alertness and practical thinking.

Computer operators are needed wherever there are computers. Opportunities for employment can be found in wholesale and retail business, hospitals, government agencies, insurance companies, banks, transportation, public utility companies, manufacturing firms, and distributors.

Many operators are needed by independent data processing firms which process data for other firms on a fee basis.

Computer Operator (Occupational Certificate)

	Three Quarters
General Education 0201, 0202, 0317, 0750	12
Accounting 2201	4
Data Processing 2306, 2307, 2308, 2309, 2292	29
Data Processing Elective	<u>3</u>
	48 Quarter
	Credit Hours

Industrial Management Technician

The Industrial Management Technician curriculum provides training for full-time students and adult employees in business and industry who wish to prepare themselves for greater responsibilities — especially in the areas as techni-

cians, supervisors, and mid-management positions. It also provides an opportunity for employees already in these categories to further develop basic and well-rounded educational experiences to supplement their job experience.

Individual courses are structured to give a broad understanding of the principles of supervision and management as well as the fundamental techniques and skills for efficient and effective application. Studies in supervision, training techniques, economics, organization and management, personnel management leadership, with specialized courses in materials management, work simplification and labor law make up the curriculum.

Industrial Management Technician (Associate Degree)

Six Quarters

*General Education Core	25
General Management and Related 2211, 2212, 2231, 2242, 2340, 6001, 6004, 6008, 6010, 6012, 6014, 6016, 6018, 6020, 6022, 6030, 6034, 6035, 6038, 6040, 6042, 6046	<u>68</u> 93 Quarter Credit Hours

* The general education core is listed on page 39 of this catalog.

Marketing Technician, Industrial, Retail and Fashion Merchandising

The economy of our country depends on our ability to distribute the goods we manufacture. The distribution of goods is known as "marketing" and is a specialized field which needs young men and women trained in marketing techniques and methods of distribution.

Industrial marketing technicians may be known as industrial or wholesale salesmen, factory representatives, or service representatives. They work for manufacturers, distributors, service firms, or wholesalers, and all are involved in some phase of the movement of goods from factory to consumer.

Their firms may sell hundreds of items or only one; the product may be highly technical or nontechnical; they may sell their product to other businesses — factories, railroads, banks, wholesalers, retailers, hospitals, or schools.

An industrial salesman represents his firm in his assigned territory. He introduces new products, sells established items, and is of service to his customers.

The volume of retail sales in Indiana has tripled in the past twenty years. It has led to an increased need for people trained in retail marketing — people who do more than just “wait on” customers. A good salesperson who is friendly and helpful to the customer, and he knows how to generate buying excitement and how to display merchandise effectively. He understands the guidelines for successful operation of a business.

Advanced positions in retail marketing call for people who know how to establish sales goals, how to keep inventory in balance with demand, and how to hire and train employees.

Industrial Marketing (Associate Degree)

Six Quarters

*General Education Core	25	
Accounting 2201, 2202	8	
Business 2301, 3005, 3025, 3100, 3440, 3026, 3441, 3442, 3007, 2281, 3050, 2255, 2271, 3020, 6001, 6012, 0852	57	
Economics 0500	<u>3</u>	
	93	Quarter
		Credit Hours

* The general education core is listed on page 39 of this catalog.

Retail Marketing (Associate Degree)

Six Quarters

*General Education Core	25	
Accounting 2201, 2202	8	
Business 3005, 3025, 3440, 3026, 3441, 2301, 3100, 3442, 6001, 3007, 2281, 3019, 2271, 3020, 3015, 0852	54	
Business Elective	<u>3</u>	
	90	Quarter
		Credit Hours

* The general education core is listed on page 39 of this catalog.

Fashion Merchandising Marketing (Associate Degree)

Six Quarters

*General Education Core	25	
Accounting 2201, 2202	8	
Business 3005, 3025, 3440, 3026, 3441, 2301, 3100, 3442, 6001, 3007, 2281, 3027, 2271, 3020, 3028, 3029	54	
Business Elective	<u>3</u>	
	90	Quarter Credit Hours

* The general education core is listed on page 39 of this catalog.

Marketing Clerk (Occupational Certificate)

Three Quarters

General Education 0201, 0202, 0211, 0317, 0505	14	
Accounting 2201, 2202	8	
Business 2301, 3005, 3025, 3100, 3440, 3441, 3442, 3026	<u>27</u>	
	49	Quarter Credit Hours

Secretarial Technician (Executive, Legal and Medical)

The secretarial program is six college quarters in length and provides specialization in one of three major areas: Legal Secretary, Executive Secretary or Medical Secretary. Achievements in shorthand, typewriting and related skills are developed and mastered. In each of the three areas of specialization, the student will take supplemental courses which directly relate to the needs of the occupation.

The executive secretary is qualified to work as a stenographer or secretary with professional people. A stenographer primarily is responsible for taking dictation and transcribing letters, memoranda, or reports.

The secretary in addition to taking dictation and transcribing, is given more responsibility in connection with greeting visitors, screening telephone calls, and being an assistant to the executive. The secretary relieves the employer of numerous routine duties which she often handles on her own initiative.

A secretary may schedule appointments for her employer, arrange for airline tickets and hotel reservations, and handle private or confidential records. Sometimes a secretary also supervises other clerical personnel. Responsibilities vary depending on the situation.

Opportunities for men as secretaries tend to be concentrated in the field of court reporting and in education, welfare and professional services, manufacturing and public administration.

The drama of the courtroom, the excitement of law work, the emotion of the behind-the-scenes happenings in a law office make the work of a legal secretary interesting and exciting as well as financially rewarding.

As the laws of our country become more complex, the demand for qualified legal secretaries increases, and as a legal secretary becomes more experienced and is able to assume more responsibilities, she becomes more valuable to her employer.

The legal secretary of today often becomes a specialist in criminal law, probate work, administration law, corporate law, collection work, diversified law, or claims work.

The need for the specialized skills of a medical secretary continues to increase. A medical secretary in a hospital, clinic or other medical office today is an important member of the medical team.

The medical secretary is qualified to work as a stenographer or a secretary in hospitals, medical offices, government health departments, clinics, medical schools, medical supply companies, and large industrial corporations which have medical and first aid departments.

Executive Secretarial (Associate Degree)

	Six Quarters
*General Education Core	25
**Clerical Business Core	28
Business 2104, 2144, 3011, 3012, 3013, 3014, 2281, 2251, 2137, 2153, 0852	30
Business Elective	3
Mathematics 0337	5
	91
	Quarter
	Credit Hours

- * The general education core is listed on page 39 of this catalog.
- ** The clerical business core is: Business 2101, 2102, 2135, 2141, 2142, 2143, 2124, 2152, 2301.

Legal Secretarial (Associate Degree)

Six Quarters

*General Education Core	25	
**Clerical Business Core	28	
Business 2139, 2144, 2251, 2271, 2281, 2283, 3011, 3012, 3013, 3014, 0852	30	
Business Elective	3	
Mathematics 0337	<u>5</u>	
	91	Quarter
		Credit Hours

- * The general education core is listed on page 39 of this catalog.
- ** The clerical business core is: Business 2101, 2102, 2135, 2141, 2142, 2143, 2124, 2152, 2301.

Medical Secretarial (Associate Degree)

Six Quarters

*General Education Core	25	
**Clerical Business Core	28	
Business and Medical 4211, 2105, 2144, 2151, 2193, 0852	27	
Medical Science Electives	6	
Mathematics 0337	<u>5</u>	
	91	Quarter
		Credit Hours

- * The general education core is listed on page 39 of this catalog.
- ** The clerical business core is: Business 2101, 2102, 2135, 2141, 2142, 2143, 2124, 2152, 2301.

Clerical Secretarial (Occupational Certificate)

Three Quarters

General Education 3001, 0755, 0750	13	
**Clerical Business Core	28	
Business Elective	<u>3</u>	
	44	Quarter
		Credit Hours

- ** The clerical business core is: Business 2101, 2102, 2135, 2141, 2142, 2143, 2124, 2152, 2301.

PRACTICAL ARTS DIVISION

Commercial Art Technology

The objective of this curriculum is to prepare men and women for employment as Commercial Artists in many types of businesses. These persons may be employed preparing art designs or illustrations for advertisers: television commercials, cartoons, industrial and advertising films; they may be involved in fashion illustration, packaging design, wallpaper and textile design, display, poster, and direct mail advertising, and window display for retail department stores. Many such artists are self-employed; others work for manufacturers, department stores, advertising agencies, television stations, sign shops, and newspapers.

The commercial artist produces art for commerce. He is an interpreter of ideas and is capable of translating the thought of the client, or a business associate, into a graphic statement.

As industry and business grow, so grows the need for commercial artists. Both men and women find rewarding careers in this field of artistic work.

The commercial artist may be employed by an art agency, an advertising agency, a large industry, a newspaper, department store, sign shop, publishing company, or television station, or he may work as a free-lance artist.

The artist may prepare art designs or illustrations for advertisers, television commercials, cartoons, industrial or advertising films, fashion illustrations, packaging designs, wallpaper and textile designs, display posters, direct mail advertising, brochures, and other publications, or even window displays for retail department stores.

Prior art training or experience is desirable, but not necessary, as long as the applicant displays evidence of art ability.

Transcripts of previous schooling are required prior to acceptance, and each student will be interviewed by the instructor. Portfolios of art achievement are helpful in evaluating qualifications.

Commercial Art Technician (Associate Degree)

Six Quarters

*General Education Core	25
Art and Related 6311, 6315, 6318, 6316, 6323, 6350, 6341, 6312, 6324, 6352, 6329, 6339, 6327, 6353, 6330, 6328, 6345, 6340, 6346, 6400, 0852	64
Mathematics 0337	<u>5</u>
* The general education core is listed on page 39 of this catalog.	94 Quarter Credit Hours

Graphic Arts Technology

Printing is an art, a means of communication, and a leading industry, and the demand for trained printers throughout the country is great.

The complexity and high mechanization of printing equipment today makes training in modern methods and techniques extremely important. Indiana Vocational Technical College has a modern graphic arts laboratory at its Terre Haute campus and offers training in the graphic arts field.

The equipment in this lab includes offset presses, letterpress, Varsity, folders, Headliner, stripping tables, plate-making equipment, paper drills, power paper cutter, horizontal camera, and darkroom equipment.

The graphic arts industry provides employment for a great number of people in a wide variety of specialties. Printing craftsmen usually specialize in one area of the printing operation such as type composition, photography, platemaking, presswork, or binding.

Opportunities for employment are found in printing and publishing plants, government agencies, manufacturers of paper products, and in many large corporations, banks, insurance companies, colleges, and travel organizations which have their own print shops.

Graphic Arts Technician (Associate Degree)

	Six Quarters
*General Education Core	25
Graphic Arts 6309, 6310, 6313, 6314, 6319, 6335, 6374, 6375, 6380, 6382, 6388, 6389, 6390	61
Mathematics 0319	5
Business 2101, 2306, 6052	<u>8</u>
* The general education core is listed on page 39 of this catalog.	99 Quarter Credit Hours

Institutional Foods Management

Millions of Americans "eat out" every day, and the demand for people trained in culinary arts is many times greater than the supply.

Eating places vary from roadside diners to plush restaurants with exotic atmospheres. Most are independent businesses with fewer than 10 employers.

A manager is responsible for the entire operation of an establishment. He coordinates and directs the work of chefs, cooks, waiters, waitresses, kitchen helpers, and other employees to insure that the food is prepared properly and served promptly. He also makes sure the health and sanitation regulations are observed.

Supervisory positions can be found in dining rooms and cafeterias in schools, colleges, hotels, department stores, factories, hospitals, nursing homes, private clubs, and in public restaurants.

The graduate of this program will be qualified for employment as a chef-manager, food service supervisor, caterer, soups chef, cook, storekeeper, purchasing agent, pastry cook, pastry chef, or manager-trainee.

Institutional Foods Management Technician (Associate Degree)

Six Quarters

*General Education Core	25	
Nutrition 3550, 3551	4	
Culinary Arts 3560, 3561, 3500, 3563, 3552, 3564, 3565, 3518, 3566, 3524, 3567, 3568, 3569, 3580, 3570, 3571, 3586, 3562	64	
	93	Quarter
		Credit Hours

* The general education core is listed on page 39 of this catalog.

Institutional Foods Service Assistant

Cooks and chefs (head cooks) help establish a restaurant's reputation through their culinary skills. Large restaurants may have several cooks each specializing in a particular type of food. Many small restaurants may have only one cook and perhaps one or two helpers.

A chef supervises a staff of cooks and kitchen helpers, helps train other cooks, creates new dishes, and makes decisions on the size of food portions.

The graduate of this program will be qualified to find employment as an assistant cook. With experience, he would be in line to advance to the position of cook or even to such positions as chef or head waiter.

Opportunities for employment can be found in dining rooms and cafeterias in schools, colleges, hotels, department stores, factories, hospitals, nursing homes, private clubs, institutions and resorts. Both men and women will find rewarding careers in this area of work.

Institutional Foods Service Assistant (Occupational Certificate)

Three Quarters

General Education 0317, 0202,	
0211	9
General Education Elective	3
Culinary Arts 3560, 3561, 3500,	
3562, 3518, 3563, 3552, 3564,	
3565	30
Nutrition 3550, 3551	<u>4</u>
	46 Quarter
	Credit Hours

Interior Design Technology

The creative work of interior designers and decorators is being used more and more by a variety of firms and businesses.

Interior design technicians plan the arrangement of interior space and coordinate the selection of furniture, draperies, floor coverings, and interior accessories.

They may work on the interiors of residences, offices, other commercial buildings, ships or aircraft. Some interior design technicians may work on stage sets for motion picture or television studios; they may design furniture and accessories to be used in interiors, and others may redesign interiors of old structures.

The graduate of this program will be trained to work as an interior design assistant or trainee in interior decoration firms, as a sales consultant for furniture stores and home furnishings departments, as a buyer-trainee for home furnishings departments or as a painting and decorating advisor.

Some hotel and restaurant chains have full-time interior design personnel. Interior designers and decorators also

are employed by paint and decorating contractors, architects, floor coverings firms, industrial design firms, office furniture stores and textile manufacturers. Both men and women will find rewarding careers in this area.

Interior Design Technician (Associate Degree)

Six Quarters

*General Education Core	25
Interior Design, Art, and Related	
6311, 6374, 6307, 6308, 6330,	
6320, 6312, 6221, 6231, 6240,	
6250, 6260, 6241, 6232, 6270,	
6280, 6285, 6261, 6271, 6281,	
3025	<u>69</u>
	94 Quarter
	Credit Hours

* The general education core is listed on page 39 of this catalog.

AGRICULTURAL AND INDUSTRIAL TECHNOLOGY DIVISION

Agricultural occupations, both technical and semi-technical, afford many opportunities for excellent employment. Increased specialization and mechanization in agriculture have fostered new occupations away from the farm as well as requiring the successful farmer to become an agricultural business manager.

The College offers training programs in the areas of agricultural management and the areas of specialization that perform specific services for the farmer.

In providing agriculture training, the curricula are constructed by advisory committees of agricultural representatives to assure that subjects covered and courses taught provide the students with experiences needed in their chosen occupation.

Agricultural Business Technician

The two-year agricultural business technician's program gives the student a thorough understanding of business principles and procedures as they relate to agricultural products, services and supplies. The program qualifies the student to fill a wide variety of mid-management positions.

The graduate is prepared to fill positions as an operator or manager of dairy, livestock, grain, or general farms. He also is qualified to fill such positions as a farm products inspector, agricultural field serviceman, manager of a farm supply store, manager of a feed mill, or a salesman of agricultural supplies and equipment.

Opportunities for employment also can be found in the areas of agricultural marketing, processing, wholesaling, retailing, and financing.

Through lectures, the student is familiarized with accounting, record keeping, and budget making. In laboratory facilities, he studies agriculture as it is being practiced today. Through selected field trips, the student views modern agriculture and business at work.

Agriculture Business Technician (Associate Degree)

	Six Quarters
Chemistry 0440	4
*General Education Core	25
Accounting 2201, 2202	8
Business 2251, 2124, 3025	9
Agriculture 1004, 1380, 1080, 1205, 1105, 1202, 1387, 1388, 1389, 1007, 1120, 1402	40
Mathematics 0319	5
General Education Elective	<u>3</u>
	94 Quarter
	Credit Hours

* The general education core is listed on page 39 of this catalog.

Agricultural Equipment Technician

Today's farms are larger, more mechanized and produce more than ever before. With this increased mechanization, the need for skilled technicians to fill positions in the manufacture, selling and servicing of agricultural equipment has increased as well.

Throughout Indiana, agricultural equipment technicians are needed who can service, repair, maintain and demonstrate modern agricultural equipment.

The graduate of this program will know how to repair and service many kinds of agricultural equipment. He also will be qualified to demonstrate the use of the equipment.

Opportunities for employment can be found with manufacturing firms which produce agricultural equipment, farm equipment service and sales companies, elevators and farm supply firms and with food processing industries.

Agriculture Equipment Technician (Associate Degree)

Six Quarters

*General Education Core	25	
Agriculture and Related 1431, 1402, 6479, 1410, 1404, 1421, 1411, 1420, 1430, 1415, 1412, 1432, 1416, 1405, 1380, 1406, 1433	<u>68</u>	
	93	Quarter
		Credit Hours

* The general education core is listed on page 39 of this catalog.

Agriculture Clerk (Occupational Certificate)

Three Quarters

General Education 0201, 0202, 0211, 0505	9	
Agriculture and Related 1402, 1410, 1415, 1380, 1205, 1120, 1004, 1080, 1007	32	
Mathematics 0317	<u>5</u>	
	46	Quarter
		Credit Hours

Automotive Technician

Automotive technicians are needed in the diagnostic automotive service field, in engine-testing laboratories, and for various management positions.

The IVTC student receives a general education and gets a broad view of the automotive field in addition to management training which prepares him for a place in the rapidly expanding automotive service field.

The student is given thorough preparation in every aspect of automotive maintenance and repair, including wheel alignment and balance, carburetion, ignition, tune-up procedures, brakes, and front suspension. He learns about all types of current internal combustion engines and vehicular equipment.

The increasing vehicular population and the constant improvements in modern cars and trucks require automotive technicians and mechanics to have the type of training which is secured best in a well-equipped technical college like IVTC. Both theoretical and practical training are given in all phases of automotive service and in the use of modern service tools and equipment.

Automotive Technician (Associate Degree)

	Six Quarters
*General Education Core	25
Automotive and Related 6402	
6607, 6901, 6617, 6605,	
6479, 6615, 6801, 6611,	
6609, 6650, 6613, 6664,	
6662, 6640	60
Physics 0450, 0451	8
Mathematics 0329	<u>5</u>
	98
* The general education core is listed on page 39 of this catalog.	Quarter Credit Hours

Automotive Mechanics (Semi-Technical)

The automotive mechanic is a skilled, well-paid, respected worker whose services are always in demand and who is extremely important to the national economy. As a result of society's great dependence on automobiles for transportation and because today's cars are highly developed, automobiles must be serviced regularly.

The auto mechanic diagnoses and corrects mechanical faults in vehicles — cars, trucks, buses, and, in some communities, tractors, marine engines and other equipment.

The graduate of this occupational training program is able to determine the causes of faulty operation and to repair and replace defective parts to restore the vehicle to proper operating condition. He is able to identify, dismantle, adjust, repair, replace and reassemble the various parts of the engine, transmission and chassis units.

He knows how to care for and safely use the basic tools and testing equipment associated with auto repair. He is able to follow specifications and instructional manuals and to use shop manuals and other technical publications.

Automotive Mechanic (Occupational Certificate)

Four Quarters

General Education 0201, 0211, 0455, 0725, 0755, 7500	13
Mathematics 0317	5
Mechanics and Related 6603, 6605, 6607, 6609, 0852 6610, 6611, 6613, 6617, 6901	<u>52</u>
	70 Quarter
	Credit Hours

Automobile Body Repairman (Semi-Technical)

A skilled auto body refinisher needs a high level of manipulative ability to repair the damaged parts of an automobile to "like new" condition. The job requires a maximum of physical effort in order to work with thin sheet metal panels and intricately shaped panels.

The auto body repairman welds and repairs latching mechanisms, removes and replaces auto glass, aligns body panels, and repairs body frames.

At the conclusion of his sheet metal studies, the student is able to refinish a damaged area in the color and gloss that match the original finish.

The graduate will be able to remove dents in automobile bodies and fenders, take off fender panels and replace them, align wheels, and straighten frames, doors, hoods, and trunk lids.

He can shrink stretched metal, prepare metal for painting, remove and install interior trim, install headings and seat covers, repair and replace upholstery and fabric tops of vehicles, and rebuild springs and padding.

The graduate can read and interpret blueprints, charts, instruction and service manuals, and wiring diagrams. He can prepare orders for repairs and parts as well as estimates and statements for insurance adjusters.

Opportunities for employment can be found in automobile agency body shops and specialized body and paint shops. After gaining experience, many craftsmen in this field open their own business or become auto body shop foremen, supervisors or managers. Auto body repair training is helpful to persons interested in becoming insurance adjusters or sales representatives for manufacturers of auto body tools and supplies.

Auto Body Repairman (Occupational Certificate)

Three Quarters

General Education 0201, 0317

0455, 0850

13

Mechanics 6612, 6632, 6633,

6634, 6635, 6901, 6902

34

47 Quarter

Credit Hours

Diesel Mechanics

Repairs and maintains diesel engines used to power machines, such as buses, trucks, electric generators, and construction machinery, using handtools, precision-measuring instruments, and metalworking tools. Diagnoses trouble, disassembles engines, and examines parts for defects and excessive wear. Reconditions and replaces parts such as pistons, bearings, gears, valves, and bushings, using engine lathes, boring machines, handtools, and precision-measuring instruments. He may be employed as Automotive Mechanic, Diesel-engine Mechanic, Bus Mechanic, Marine Mechanic, Construction Mechanic or Farm Diesel Mechanic.

Diesel Mechanics (Semi-Technical)

Three Quarters

General Education 0201, 0202,

0317, 0455

13

Mechanics and Related 6640, 6652

6653, 6654, 6670, 6679,

6801, 6901

34

47 Quarter

Credit Hours

Drafting and Design Technologies

Program offerings include two curricula for becoming an Architectural or a Manufacturing Design Technician. Upon graduation from a two-year, six quarter curriculum in Drafting and Design Technology the student will have full qualifications for entering into these fields of employment.

In building an office building or a factory, a home, or school, detailed plans are needed to give the exact dimensions and specifications for the structure and each of its parts.

The technicians who translate the ideas, rough sketches, specifications and calculations of engineers, architects and

designers into complete and accurate working drawings are draftsmen.

Manufacturers of all kinds of building materials need architectural draftsmen to do shop drawings of such items as windows, doors, or whatever the firm is manufacturing. Materials suppliers in the allied field of manufacturing also need draftsmen to produce drawings for installing parts or how to use their materials.

Opportunities for employment also can be found with engineering and architectural firms, construction companies, public utilities, highway and public works departments, colleges, universities, and local, state and federal governments.

Architectural Drafting Technician (Associate Degree)

Six Quarters

*General Education Core	26**
Mathematics 0325, 0319	10
**Physics 0451	4
Business 2124	3
Technical Design 6420, 6421, 6422, 6430, 6439, 6423, 6436, 6432, 6424, 6437, 6428, 6425, 6444, 6434	<u>56</u>
	99 Quarter
	Credit Hours

* The general education core is listed on page 39 of this catalog.

** Physics I is required for 3 credit hour General Education elective.

Architectural Drafting Assistant (Occupational Certificate)

Four Quarters

General Education 0317, 0211, 0201	9
Mathematics 0325, 0319	10
Physics 0450	4
Business 2124	3
Technical Design 6420, 6421, 6422, 6439, 6430, 6437, 6444, 6436, 6434	<u>40</u>
	66 Quarter
	Credit Hours

In making a space capsule or a television set, a nuclear submarine or a washing machine, detailed plans which give the exact dimensions and specifications for the object and each of its parts are needed.

Draftsmen are the ones who translate the ideas, rough sketches, specifications and calculations of engineers, architects and designers into complete and accurate working drawings which are used by skilled craftsmen in making a product.

Draftsmen working in the manufacturing and design areas produce the working drawings which are used by the craftsmen to manufacture the product. The drafting technician does factory layout work, tool and mold design work, tooling layout work, scheduling, purchasing of raw materials, and may even be responsible for the complete fabrication of a particular product.

Manufacturers across the country need draftsmen to help design molds, tools, and products. This includes manufacturers of electrical equipment, machinery, fabricated metal products, transportation equipment, and materials for other manufacturers.

Opportunities for employment also can be found with construction companies, public utilities, highway and public works departments, colleges, universities, and local, state and federal governments.

Manufacturing Design Technology (Associate Degree)

Six Quarters

*General Education Core	26**
Mathematics 0319, 0325	10
**Physics 0451	4
Business 2124	3
Technical Design 6405, 6406, 6407, 6496, 6481, 6408, 6464, 6409, 6479, 6410, 6497, 6435, 6034	<u>54</u>
	97 Quarter
	Credit Hours

* The general education core is listed on page 39 of this catalog.

** Physics I is required as a General Education elective.

Manufacturing Drafting Assistant (Occupational Certificate)

Four Quarters

General Education 0317, 0201, 0211	9
Mathematics 0325, 0319	10
Physics 0450	4
Business 2124	3

Technical Design 6405, 6406,
6407, 6408, 6464, 6034,
6481, 6479, 6435

40
66 Quarter
Credit Hours

Electronics Technology

The field of electronics is vast, and the need for trained men and women to operate, maintain, research, and construct electronic equipment is becoming more critical each year.

The field includes television, radio, radar, sonar, computers, missile and spacecraft guidance and control instruments, and industrial measuring and controlling devices. Electronic technicians work with engineers and scientists and do complex technical work. The graduate will be qualified to enter many different facets of the electronics field.

Employment opportunities in the field of electronics are expanding rapidly. Electronic technicians are needed for work on guidance systems, space craft, computers, automotive production work, quality control work, in the medical field, and in the appliance field.

Opportunities can be found in industry, the service trades, utilities companies, electrical contractors, communications, and federal, state and local government agencies.

Electronics Technology (Associate Degree)

Six Quarters

*General Education Core	26**
Electronics and Related 6404, 6506, 6507, 6527, 6508, 6509, 6528, 6512, 6529, 6513, 6630, 0852	59
Data Processing 2301	3
Mathematics 0319, 0325	<u>10</u>
	98 Quarter
	Credit Hours

* The general education core is listed on page 39 of this catalog.

** Physics I is required for 3 credit hour General Education elective.

Radio and Television Service Technician

A skilled radio and television technician uses his technical knowledge of electrical and electronic parts and circuits to install and repair electronic products, mostly television sets and radios. He also may repair other electronic

products such as phonographs, hi-fidelity and stereophonic sound equipment, intercommunication equipment, tape recorders, and public address systems.

Most of his work involves diagnosing trouble in the equipment and making the necessary repairs and adjustments. He checks and evaluates each possible cause of trouble, conducts routine checks and may use electronic testing equipment to check suspected circuits. He may measure voltages and use such testing instruments as vacuum tube voltmeters, multimeters, oscilloscopes, signal generators, and other specialized instruments.

Most radio and television technicians work in service shops or for stores which sell and service television receivers, radios and other electronic products. Others are employed by government agencies and manufacturers, including manufacturers who operate their own service branches.

Radio and Television Technician (Occupational Certificate)

Four Quarters

General Education 0201, 0725, 7500	7
Electronics and Related 6505, 6514, 6530, 6531, 6532, 6533, 6535, 6540, 6541, 6542	<u>57</u>
	64 Quarter
	Credit Hours

Ground Water Specialist (Semi-Technical)

This program is designed to provide qualified individuals to participate in the critical development and management of our nation's underground water resources. With surface water supplies being repeatedly depleted in quantity and quality, the use of our vast ground water reserves will double and perhaps triple during the coming decade. Trained specialists are needed in the fields of water well construction technology, well and pump maintenance and repair as well as municipal ground water systems operation.

The one year curriculum leading to the Ground Water Specialist Certificate contains a balanced training in me-

chanical and electrical theory and practice, water well construction skills and techniques as well as fundamental training in geology, hydrology and water hygiene.

This program has been established in cooperation with the National Water Well Association and leads to eligibility for NWWA Certification as Well Drilling and Pump Installation Specialist.

Ground Water Specialist (Occupational Certificate)

	Three Quarters
General Education 0201, 0755	5
Mathematics 0317	5
Ground Water and Related 7000, 7005, 7010, 7015, 7020, 7025, 7030, 6905	27
Technically Related 6479, 6502, 6608, 6901	<u>11</u> 48
	Quarter Credit Hours

Industrial Electrician (Semi-Technical)

All industrial plants need craftsmen who can service electrical equipment and machinery.

A large part of the plant electrician's work is preventive. He periodically inspects equipment to find and repair defects before breakdowns occur. When trouble does develop, he repairs the faulty circuit or equipment so that production can continue. His duties include replacing wiring, fuses, circuit breakers, coils and switches. He also may do minor installation work.

While doing repair or installation work, the plant electrician may connect wires by splicing or by using mechanical connectors. He may measure, cut, bend, thread, and install conduits through which wires are run to outlets, panels and boxes. He also may adjust equipment controls and check and adjust instruments.

The electrician uses such devices as test lamps, ammeters, volt-ohm meters, and oscilloscopes in testing electrical equipment and wiring. He often works from blueprints, wiring diagrams, and other specifications.

In large plants, an electrician may be responsible for the maintenance of a particular type of equipment such as motors or transformers. In a small plant, the plant electrician usually is responsible for all types of electrical repair work.

Industrial Electrician (Occupational Certificate)

Three Quarters

General Education 0201, 0211, 0317, 0755, 0850	14	
Electrical and Related 6401, 6503, 6505, 6510, 6545, 6580, 6585	<u>40</u>	
	54	Quarter
		Credit Hours

Library Aide (Semi-Technical)

The aim of the Library Aide program is to provide men and women qualified to function as members of the library staff in a school, college or university, special, or public library; specifically to perform clerical and nonclerical tasks under supervision. The curriculum is designed to provide a basic level of competency in clerical, communication, and mathematical skills, and to acquaint the student with library organization and operations through classroom instruction balanced with practical experience.

Library Aide (Occupational Certificate)

Three Quarters

General Education 0201, 0317, 0852	14	
Library 2701, 2702, 2703	15	
Business 2101, 2102, 2152	9	
Electives	<u>10</u>	
	48	Quarter
		Credit Hours

Machine Tool Repairman (Semi-Technical)

The tools and equipment used by industry have to be kept in good operating condition, and skilled workers who can maintain and repair these tools are needed throughout the country.

The main function of the machine tool repairman is to restore the accuracy of the machine tools. He does this by replacing parts, rebuilding, regrounding and rescraping.

When a breakdown occurs, the machine tool repairman needs to be able to determine the cause of the trouble, make the necessary repairs, and return the equipment to proper working order.

In doing this work, he may completely or partly disassemble a machine before replacing and repairing the defective part. After the machine is put back together, he makes the necessary adjustments to be sure it is working properly.

Some of a repairman's time is spent in preventive maintenance by regularly inspecting the equipment. He prevents trouble which could cause breakdowns later. He also may keep maintenance records of the equipment he services.

In performing his duties, the machine tool repairman uses such handtools as wrenches, screwdrivers and pliers. He also uses portable power tools and may use welding equipment in repairing broken metal parts.

Most machine tool repairmen overhaul machine tools used in metalworking industries. Machine tool repairmen also are needed in industries involved with the production of food, chemicals, plastics, paper, electrical machinery, and the rubber industry.

Mechanical aptitude and manual dexterity are important qualifications for workers in this trade.

Machine Tool Repairman (Occupational Certificate)

Three Quarters

General Education 0317, 0201, 0850	9
Machine and Related 6401, 6010, 6802, 6851, 6411, 6852, 6860, 6865, 6803, 6853, 6861	39
Mathematics 0319	<u>5</u>
	53 Quarter
	Credit Hours

Mechanical Engineering Technology

The increased technology and automation in our vast industrial complexes have created a great demand for mechanical engineers. Mechanical engineers are concerned

with production, transmission and use of power. They design and develop machines to produce power as internal combustion engines, steam and gas turbines, jet and rocket engines and nuclear reactors.

Mechanical engineers also design and develop a variety of machines which use power. This includes refrigerating and air-conditioning equipment, elevators, machine tools, and printing presses.

Many mechanical engineers do research, development or design work. They may specialize in vehicles, marine equipment, railroad equipment, rocket engines, steam power, heating, ordnance or instrumentation. The graduate of this program will be qualified to work as an engineering assistant or associate engineer. He will be capable of troubleshooting and will be able to convert engineering theory into actual practice.

Mechanical engineers are employed by manufacturers in the fields of transportation, machinery, primary and fabricated metal products, electrical equipment, plastics, and other types of equipment and products.

Opportunities for employment also can be found in government agencies, colleges and universities, and consulting engineering firms.

Both men and women will find rewarding careers in this area.

Mechanical Engineering Technician (Associate Degree)

Six Quarters

*General Education Core	25	
Physics 0451	4	
Technical Engineering 6405, 6406, 6407, 6716, 6496, 6034, 6479, 6462, 6505, 6464, 6481, 6499	48	
Mathematics 0323, 0331, 0333	15	
Data Processing 2301	3	
Technical Elective	<u>3</u>	
* The general education core is listed on page 39 of this catalog.	98	Quarter Credit Hours

Tool and Die Machinist (Semi-Technical)

Tool and die machinists are highly skilled craftsmen who make tools, dies, and special guiding and holding devices which are used in mass production in metal-working industries.

Tool makers specialize in producing jigs and fixtures (devices which are needed to hold metal while it is being shaved, stamped or drilled). They also make gages and other measuring devices used in manufacturing precision metal parts.

Die makers construct metal forms (dies) which are used in stamping and forging operations used in shaping metal. They also make metal molds used in diecasting and in molding plastics.

Tool and die machinists repair worn or damaged dies, gages, jigs and fixtures. Some tool and die makers help design tools and dies.

Tool and die makers have a broad knowledge of machine operations, shop practices, mathematics, and blueprint reading. They can work to close tolerances and do precise handwork. They use almost every type of machine tool and precision-measuring instrument and work with all metals and alloys commonly used in manufacturing. They must be familiar with the machining properties of these various metals.

Prospective trainees should be mechanically inclined and suited to do highly accurate work that requires concentration as well as physical effort.

Tool and Die Machinist (Occupational Certificate)

	Three Quarters
General Education 0317, 0201, 0850	9
Machine and Related 6401, 6010, 6802, 6851, 6411, 6881, 6412, 6882	32
Mathematics 0319, 0325	<u>10</u>
	51 Quarter
	Credit Hours

Welding (Semi-Technical)

Welding is one of the most common and most dependable methods of joining metal parts. Many parts used in the manufacture of automobiles, missiles and spacecrafts, airplanes, household appliances and thousands of other products are joined by welding.

Structural metal used in the construction of bridges, buildings and storage tanks often is welded. The welding process also is used to repair broken metal parts.

Welders join the metal parts by applying intense heat and sometimes pressure. This melts the edges and allows the formation of a permanent bond. There are more than 35 different ways to weld. Electric Arc, gas and resistance welding are the three most important ways.

The principal duty of the welder is to control the melting by directing the heat from either an electric arc or a gas welding torch and to add filler metal where necessary to complete the joint.

Employment opportunities are available in the fabrication and building trades as well as in small shops doing maintenance work. Industries which need welders include utility companies, light and heavy metal manufacturing concerns, electric motor manufacturers, construction companies, mining concerns, farm and industrial equipment manufacturers, and truck and automobile manufacturers. In fact, almost all manufacturers who use metal need welders.

Welder (Occupational Certificate)

	Three Quarters
General Education 0201, 0202	4
Welding and Related 6910, 6502, 6911, 6401, 6942, 6479, 6912	33
Science 0455	4
Mathematics 0319	<u>5</u>
	46 Quarter
	Credit Hours

LIFE SCIENCES DIVISION

HEALTH OCCUPATIONS

NOTE: Health Occupations curricula are currently being revised. The following programs will be offered by various regions. See the catalog supplement for details on programs and courses.

The need for Health Services is increasing. Well-trained men and women can find rewarding careers as Medical Laboratory Assistants, Medical Assistants, Practical Nurses, Operating Room Technicians, Radiologic Technologists, or Inhalation Therapists.

Radiologic Technology

Radiologic Technology is a two-year program offered by the College as a cooperative educational institution affiliated with hospital-approved schools of Radiologic Technology accredited by the American Registry of Radiologic Technologists. This curriculum introduces the student to the principles of radiologic technique, exposure, therapy, positioning, protection, and ethics and is conducted with clinical practice and supplemental instruction in the accredited hospitals. The college confers a technical degree after an additional program of general studies.

All students admitted to the program of Radiologic Technology must be accepted by the approved schools of radiologic technology prior to their admission to class. General requirements are graduation from high school and an aptitude and sincere desire for a career in radiologic technology.

Medical Lab Assistant and Medical Lab Technician

The aim of the medical laboratory assistant program is to provide qualified men and women with an opportunity to prepare as safe and reliable functioning members of the laboratory team; specifically to perform routine laboratory tests under supervision. The one-year program encompasses a balance of theory, laboratory practice and clinic application. Standards for the laboratory assistant program have been established by the Committee on Certified Laboratory Assistants, approved by the Council on Medical Education of the American Medical Association. Students who satisfactorily complete the prescribed studies are eligible in the first year and expected to take the certified laboratory assistants' national examination. A satisfactory score on this examination entitles the graduate to use the title "Certified Laboratory Assistant" (CLA) after his name. The second year of the curriculum offers advanced clinical techniques and general education.

Operating Room Technician

This curriculum is designed to prepare the graduate to work as a member of the surgical team. The student studies anatomy and physiology, surgical anatomy, aseptic

technique and selected procedures. The program is fully approved by the Association of Operating Room Nurses, and graduates are qualified for the national examination for Operating Room Technicians.

Medical Assistant

This curriculum is designed to offer an educational opportunity for individuals to develop the skills needed for employment as a medical assistant in a physician's office, clinic or health care agency. Courses are offered in anatomy and physiology, medical assisting techniques, as offices, clinics, and industry. Clinical experience is designed to offer the opportunity for practical applications of the educational programs.

Practical Nursing

This program is designed to meet the requirements of the Indiana State Board of Nurses' Registration and Education to prepare the candidate for licensure as a practical nurse in the state of Indiana. A licensed practical nurse works under the supervision of a physician or registered nurse in caring for patients, including medical and surgical patients, new-born and their mothers, convalescents, and the aged. This one-year program offers courses of studies in anatomy and physiology, nursing, skills, conditions of illness, nutrition and personal and community health. The student is expected to achieve satisfactory performance levels, as determined by the practical nursing department, in both the theoretical and clinical areas of the program.

Inhalation Therapy Technician

Inhalation therapy is one of the newest allied health specialties. It is the treatment, management and care of patients who have a deficient or abnormal respiratory condition.

It involves the therapeutic use of medical gasses, air and oxygen administering apparatus, environmental control systems, humidification and aerosols, drugs, and medications, ventilatory control, postural drainage, chest physiotherapy and breathing exercises, respiratory rehabilitation, assistance with cardiopulmonary resuscitation, and the

maintenance of natural, artificial and mechanical airways.

The technician works under competent medical supervision but must be able to make fundamental and sound judgments about the application of specific procedures for individual patients. It is essential for the technician to understand, maintain and care for complex pulmonary and respiratory equipment.

There is an urgent need for inhalation therapy technicians to work with physicians and nurses as a team to help patients with respiratory disease. Hospitals employ the greatest number of inhalation therapy personnel, but employment opportunities are increasing at medical clinics and in physicians' offices.



PART-TIME VOCATIONAL COURSES

These courses range from one to four quarters in length depending on skill level needed and ability of student.

vocational service trade programs

Admission Requirements

1. No application form required.
2. Minimum age is 16 years.
3. Register for classes.
4. Fees range from \$27.50 to \$55.00 payable at the time of registration.

Appliance Repair	Outboard Motor Service
Automatic Transmission	Small Gas Engines
Service	Upholstering
Custodial Service	Welding-Acetylene, Arc,
Keypunch Operator Training	Tig & Mig
Oil Burner Service	Air Conditioning Service
Fluid Power	

These programs are offered at one or more of the following regions: Region II and Region VIII.

certified apprenticeship programs

The apprenticeship programs are offered in cooperation with the joint apprenticeship committees of the various contractors and unions.

Qualifications for apprenticeship generally are as follows: Applicants for apprenticeship must be at least 17 and not over 24 years of age, have a high school education or its equivalent and be in good health. (The Apprenticeship Committee has the authority to waive the maximum age limit in the case of honorably discharged veterans.) All applicants shall satisfy the Joint Apprenticeship Committee that they have the ability and aptitude to master the rudiments of the trade and have sufficient education to satisfactorily complete the required hours of related theoretical instruction.

The following information shall be submitted to the Joint Apprenticeship Committee by each applicant for apprenticeship:

- a. Application for apprenticeship made in writing to the Joint Apprenticeship Committee.

- b. Transcript of school courses and grades.
- c. Record of physical examination.

Applicants must be American citizens, or in the process of naturalization, physically able to perform the work required of the trade, and meet such other entrance qualifications as shall be established by the Joint Apprenticeship Committee.

Selection of apprentices for this program shall be made from qualified applicants on the basis of qualifications alone and without regard to race, creed, color, national origin, sex, or occupationally irrelevant physical requirements in accordance with objective standards which permit review, after full and fair opportunity for application, and this program shall be operated on a completely nondiscriminatory basis.

APPRENTICESHIP PROGRAMS*	Region II South Bend	Region VII Terre Haute	Region VIII Indianapolis
Air Conditioning and Refrigeration		x	x
Architectural Drafting	x		
Asbestos Workers			x
Automatic Screw Machine	x		
Auto Mechanic	x		
Carpenter	x	x	x
Cement Mason	x	x	
Common Laborer		x	
Electrician	x	x	
Glazier	x		
Industrial Apprentice			x
Industrial Electrician	x		

	Region II South Bend	Region VII Terre Haute	Region VIII Indianapolis
Ironworker	x		
Lather	x		x
Maintenance Mechanic	x		
Machine Repair			x
Millwright	x		x
Operating Engineer	x		x
Painters and Decorators	x		x
Patternmaker	x		
Plasterer	x		
Plumber	x	x	x
Roofer	x		
Sheetmetal	x		x
Steamfitter	x	x	x
Tool and Die	x		x

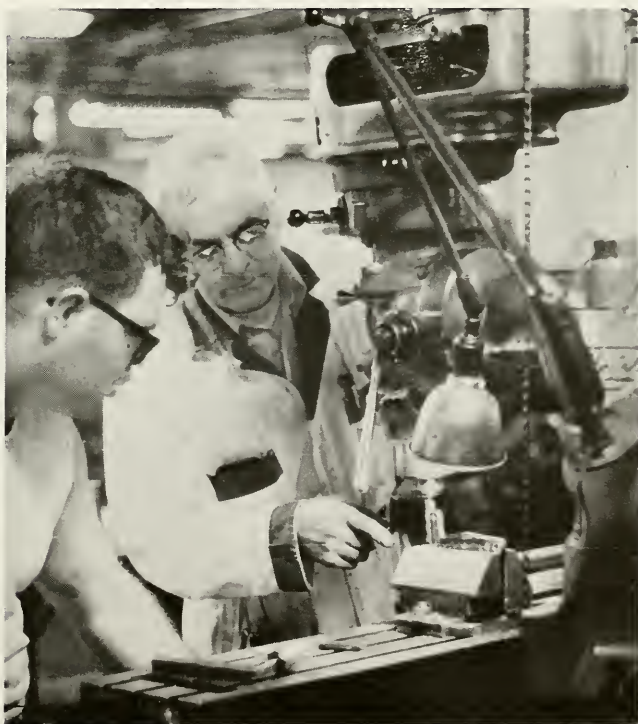
* Information may be obtained by contacting the Regional Institute with which you plan to participate. A list of the Regional Institutes is in the front of the catalog. Applications for Apprentice Programs must be made to the joint Apprenticeship Committee.

CONTINUING EDUCATION

The College, through the Regional Institutes, offers many courses in continuing education. These courses pro-

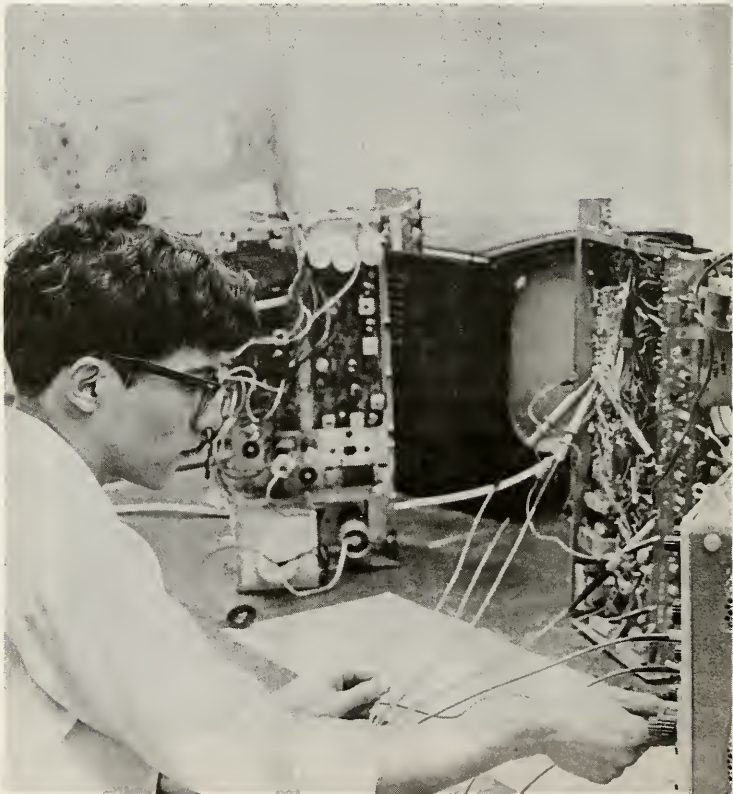
vide new knowledge or skills for individuals already engaged in a chosen field of endeavor on a project-type approach. The activities of this Division include short courses presented on an in-plant basis to meet the specific educational needs of a company.

A continuing education course can be any part or segment of any existing course or program or an entirely new course put together for a special need on a short-term basis. For this reason, these courses do not carry college credit nor are they listed in the official college catalog. The individual institutes must be contacted for a listing of these courses or for special brochures describing individual courses.



SPECIAL PROGRAMS

- CEP** - Concentrated Employment Program
- MDTA** - Manpower Development Training Act
- NABS** - National Alliance Businessmen
- STP** - State Training Program
- WIN** - Work Incentive
- Special Federal Programs
- Other Special Programs



COURSE DESCRIPTIONS

		Class	Lab	
		Hours	Hours	Credit
0101	Developmental Communication Skills	Arr.	Arr.	0

Based on the needs of each individual, this basic course in communication skills consists of intensive training through special assignments in reading, writing, speaking and listening. The instruction is designed to aid students to prepare themselves for entrance into a Communication Skills I class. This course may be used as preparation for portions of the high school equivalency GED tests.

0104	Developmental Reading	Arr.	Arr.	0
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This course is designed to provide practice in reading which will improve concentration, comprehension, rate of reading and retention of written materials. Continuing measurement of reading ability takes place to insure that the work is directed toward the needs of each individual.

0201	Communication Skills I	1	2	2
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After individual testing to determine specific language needs, this course provides for extensive training in general writing, listening, reading and speaking. Emphasis is placed on the use of logic in the development of written and oral ideas.

0202	Communication Skills II	1	2	2
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This course provides intensive training in clear, effective writing and other forms of communication enabling the student to form logical solutions for special and work-related problems and to present ideas in a persuasive manner. Prerequisite: Communications Skills I (0201) or recommendation of the instructor.

0203 Business Communications**2 2 3**

The skills needed to write business communications are taught in this course. This includes preparation of action-getting letters, prospectuses, reports, and summaries of conferences. Emphasis is on business writing which is informative, concise and persuasive.

0204 Report Writing**2 2 3**

This course develops skills for critical examination of technical data used in writing comprehensive reports. Emphasis is placed on concise presentation of technical materials.

0211 Oral Communications**2 0 2**

This course provides intensive training in speaking which is developed through informative, persuasive and special-purpose presentations. Prerequisite: Communication Skills I (0201), or recommendation of the instructor.

0310 Developmental Mathematics**Arr. Arr. 0**

This is a course designed to meet the needs in basic education for individuals who have not achieved the middle elementary school level.

0317 Fundamentals of Mathematics**5 0 5**

The fundamentals of addition, subtraction, multiplication and division are reviewed, including fractions and decimals. Percentage, ratio and proportion, measurement, equations and geometric figures are introduced. Application of the slide rule in solving problems is emphasized.

0319 Technical Algebra I**5 0 5**

Beginning algebra is studied including the operations with signed numbers, functions and variables, first degree equations, special products and factoring, algebraic fractions

and systems of linear equations. Slide rule techniques and elements of geometry and trigonometry are introduced.

0321 Technical Algebra II

5 0 5

This is a continuation of Technical Algebra I beginning with a review of linear equations and factoring and advancing to algebraic fractions, exponents and radicals, quadratic equations, graphs of equations, formulas, ratio, proportions, variation and logarithms. Also, units of progressions and the binomial theorem are studied.

0323 Technical Algebra III

5 0 5

An intensive study of the advanced topics in algebra provides a basis for the understanding of trigonometry, analytic geometry and calculus. A study of methods that are necessary for the solution of technical problems that arise in occupational areas is included.

0325 Technical Trigonometry

5 0 5

Elements of trigonometry involving right and oblique triangles are introduced in the study of trigonometry as it relates to analytic geometry, calculus and other advanced math programs. Applications to practical problems are emphasized.

0327 Logic Development

5 0 5

This course includes a study of logic, Boolean Algebra, the real number system, the binary number system, and the hexadecimal number system.

0329 Technical Applied Geometry

5 0 5

Definitions and geometric theorems and applications to solutions of technical problems which involve geometric figures are reviewed. This includes study of triangles, plane polygons, surfaces, and solid figures.

0331 Analytic Geometry and Calculus I**5 0 5**

Topics which are studied include: rectangular coordinates, lines, functions and graphs, the derivative, differentiation of algebraic functions, conic sections, slope and minimum and maximum problems.

0333 Calculus II**5 0 5**

A continuation of Calculus I is provided. Fundamentals and concepts of Integral Calculus and practical problems which involve the use of integration are studied.

0335 Introduction to Statistics**3 0 3**

Statistical methods to acquaint the student with descriptive statistics (collection and presentation of data, frequency distributions, measures of central tendency, dispersion and skewness), index numbers, simple correlation and regression, curve fitting and introduction to statistical inference, sampling, and probability are surveyed and studied.

0337 Mathematics of Finance**5 0 5**

This course stresses the fundamental operations and their application to business problems. Topics covered are percentage, discounts, markup, interest, installment purchases, depreciation, investments, payroll, insurance, annuities, and graphs and statistics.

0406 Microbiology**2 0 2**

A study is made of microbiology with emphasis on the application of science to the problems of sterilization, growth conditions for microorganisms, infection, immunity, resistance, and isolation techniques.

0440 Chemistry I**3 2 4**

This course provides for lecture and laboratory study of

fundamental principles and laws of chemistry, atomic and molecular structure, chemical bonding and properties of gases.

0441 Chemistry II

3 2 4

Additional study of fundamental principles and theory of chemistry including solutions and their colligative properties, acids and bases, chemical kinetics and equilibrium, and introductions to organic chemistry, biochemistry and industrial chemistry is made.

0442 Organic Chemistry

3 2 4

This course is based on the more important organic compounds and organic synthesis and correlation to body reactions and medicine. Prerequisite: Chemistry II.

0443 Quantitative Analysis

2 4 4

Study is designed to give experience in analytical chemical techniques. Prerequisite: Chemistry II.

0445 Principles of Biochemistry

3 2 4

This is an introductory course in the basic chemistry, properties, and metabolism of carbohydrates, proteins, lipids, nucleic acids and enzymes and their control in the human body.

0450 Physics I

3 2 4

A study is made of the science of matter and energy, and properties of matter, measurements, mechanics and sound. This includes concepts of force, motion, work, energy and power; an analysis of basic machines, and transmission of power, wave motion and sound.

0451 Physics II**3 2 4**

A study of heat, heat engines, systems and methods of temperature measurement and the concept of absolute zero is made. Light as an energy and as a portion of the electromagnetic energy spectrum and the phenomenon of color, reflection and refraction and its application to light control and optics are studied.

0452 Physics III**3 2 4**

This course involves the study of magnetism and electrostatics, basic electric circuits, sources and effects of electric current, electromagnetic induction, alternating currents, generators and motors, and the production and distribution of electric power, with technical emphasis.

0453 Modern Physics**3 0 3**

Concepts of modern physics involving the outer atom, the nucleus of an atom and the basis of nuclear energy, and applications of nuclear physics are studied. Prerequisites: Physics I, II, and III.

0455 Physical Science**3 2 4**

The basic concepts of physics and chemistry are introduced. Topics studied include: measurements, heat and forces and their effect on metals and other materials. Emphasis is on the practical application of the physical sciences.

0457 Environmental Science**3 0 3**

Man in his environment, the interrelation of forces affecting life, and the effects of pollutants (air, water, industrial and sound) are studied through the correlation of basic principles and practical applications.

0500 Economics I**3 0 3**

This course is designed to provide a comprehensive study of both theoretical and practical economic concepts stressing macroeconomics. It includes an analysis of national income accounts, the operation of the monetary and banking system and a survey of international economic problems.

0501 Economics II**3 0 3**

Microeconomics is presented as a study of economic principles at the industry level and includes economic analysis of pricing and output, the allocation of resources and distribution of income.

0505 Consumer Economics**3 0 3**

Study and review of the cost of living and price levels, factors affecting consumer choices, buying practices, management of personal and family finances, the role of government in consumer protection and current consumer problems are included in this course.

0725 Occupational Research**1 2 2**

Career pursuits are investigated in the general area of study of the student's interests and enrollment and include interviews, study of occupational information and its sources, testing, exploration of job opportunities and research of specific jobs and fields. Enrollment in the course is recommended in the first quarter of a student's entrance in the College.

0750 Psychology**3 0 3**

A study of human needs and behavior in business and industry is presented with the practicality that is needed in the world of work and includes a study of people relationships and assignments and labor-management relations. Prerequisite: Human Relations (0755).

0755 Human Relations**3 0 3**

Human Relations is a survey course in the social sciences encompassing materials from psychology and sociology as they are used to understand human behavior and motivation. Prerequisite: Psychology (0750) and Social Problems (0875).

0850 Seminar in Occupations**1 2 2**

In this course which is designed to equip the student for a smooth transfer from training to the world of work, resource persons representing industrial and business organizations discuss locating jobs, job applications and interviews, preparation of credentials, human relations, employer-employee expectations, personal grooming and appearance, labor laws, union membership, taxes, insurance, liability, trade and professional associations and organizations, occupational journals, further training, and job upgrading. Enrollment in this seminar is recommended during the last quarter of a student's study.

0852 Occupational Experience**Arr. Arr. Arr.**

Work experience is gained through on-the-job training which provides evaluation and counseling by the faculty and the cooperating employer. A student receives hands-on experience on a job directly related to his area of study. The amount of credit for this course is determined by the curriculum in which the student is enrolled.

0875 Social Problems**3 0 3**

This course provides for a study of problems in contemporary society. Prerequisite: Human Relations (0755).

1004 Introduction to Agriculture**3 0 3**

This course provides a review of the functions of the agricultural manager and an introduction to the principles he

uses in making decisions to adjust to changing conditions. It includes analysis of the agricultural industry, price systems, Federal policies, international trade, and parity and economic growth which affect agricultural business.

1007 Agricultural Biochemistry

3 2 4

Basic principles of chemistry to provide a foundation for courses in agronomy, soil science, and animal nutrition and an understanding of agricultural chemicals are covered.

1080 Agricultural Marketing

3 0 3

This is a study of the economic functions performed by various specialized marketing agencies. Emphasis is placed on co-op marketing, institutional marketing and governmental marketing agencies.

1105 Animal Science

4 2 5

This is an introductory animal science course covering the fundamental principles of livestock production. A study of the animal body and the basic principles of reproduction, genetics, growth, fattening, digestion, along with the selection, feeding, improvement, processing and marketing of livestock are covered.

1120 Animal Diseases and Parasites

2 2 3

This is a course dealing with the common diseases and parasites of animals; sanitation practices and procedures with emphasis on the cause, damage, symptoms, prevention and treatment of parasites and diseases, and management factors relating to disease and parasite prevention and control.

1202 Plant Science

4 2 5

This is an introductory general botany and crop science course covering the fundamental principles of the repro-

duction, growth, functions and development of seed-bearing plants with application to certain commercially important plants in Indiana.

1205 Soil Science and Fertilizers

4 2 5

This is a course dealing with basic principles of efficient classification, evaluation, and management of soils; care, cultivation and fertilization of the soil, and conservation of soil fertility.

1380 Farm Management and Accounts

3 0 3

Selection of a farm, farm leasing, partnerships, use of credit and farm insurance, simple farm accounting, use of accounts in farm business analysis and income tax reporting are covered.

1387 Farm Management I

3 0 3

Fundamentals of organization and operation of different types of farms, efficiency factors, important farm organizations and specific farm operations are examined.

1388 Farm Management II

3 0 3

This course is a study of credit, insurance, legislation, income tax, and social security as they apply to the farmer.

1389 Farm Management III

3 0 3

This course deals with the establishment of a total farm business.

1402 Farm Machinery I

2 4 4

Basic mechanical principles of plows, planters, mowers, choppers, combines and other common farm machines, principles of safety and study of machinery economics are covered.

1404 Farm Machinery II**2 4 4**

This course is a study of the operating principles of simple farm implements including the selection, field operation, maintenance and repair of basic farm machinery such as plows, disks, harrows, and cultivators. Principles of design and mechanics, power supply, hitching, and economics of farm machinery used are studied.

1405 Farm Machinery III**2 4 4**

The selection, care and repair of the larger units of farm equipment are covered. Operating principles of self-propelled and tractor-drawn equipment will be studied in the classroom and the field.

1406 Farm Machinery IV**2 4 4**

A study is made of specialized equipment such as balers, combines, corn pickers and other similar equipment.

1410 Tractor Engines I**2 2 3**

This course covers tractor engine fundamentals and the principles of engine operation; including horsepower calculations, efficiency, combustion theory, types of engines, cylinder and valve arrangements, lubrication, fuel and cooling systems. Laboratory work consists of demonstrations, disassembly, inspection and reassembly of various engines.

1411 Tractor Engines II**2 4 4**

This is a study of tractor electrical systems, lubrication systems and lubricants.

1412 Tractor Engines III**2 4 4**

This course provides a theoretical and practical study in correlating previous instruction by putting into practice

engine operation, tuning and adjusting, and troubleshooting. This is performed in conjunction with the latest diagnostic equipment.

1415 Agricultural Diesels I

2 4 4

Basic agricultural diesel engine principles and engine structure are studied. Also the relationship of parts, exhaust systems, and thermodynamics of combustion. Although the course will be primarily a study of all diesel engines, emphasis will be placed on those particular points of interest pertaining to farm diesels.

1416 Agricultural Diesels II

2 4 4

This is a lecture and laboratory course dealing with the disassembly and reassembly of laboratory engines including the inspection, diagnosis, repair and final assembly and testing of these engines. It includes a study of diesel fuel systems.

1420 Tractor Systems

2 4 4

This is a comprehensive study of present-day automatic transmissions, braking and steering systems found on tractors.

1421 Tractor Hydraulic Systems

2 4 4

This course is a study of the principles of hydraulics and their application to farm machinery, including components of tractor hydraulic systems, testing, maintenance and repair of hydraulic systems.

1430 Parts and Service Management

3 2 4

This is a study of the principles, practices, and procedures in efficient and profitable operation of parts and service departments of a farm equipment retail business.

1431 Farm Shop

1 4 3

This course is designed to develop the knowledge, skill, and resourcefulness of the student in the use of hand and power tools and welders for farm construction and repair, primarily in metal work.

2101 Typing I

2 2 3

This is a course for beginners in typing. It covers the development of fundamental touch typing techniques and skills and their application; including business letters, manuscripts, centering tabulation, machine parts and care, and speed development.

2102 Typing II

2 2 3

This course covers production typing problems and speed building with attention to the development of the student's ability to function as an expert typist, producing mailable copies. The production units are tabulation, manuscript, correspondence, and business forms. The student develops a minimum speed of 50 net words per minute for five minutes.

2104 Executive Typing

2 2 3

This course is designed to improve production typewriting ability in business situations. Problem and production techniques will include complex tabulation, statistical reports, rough draft, manuscripts, and forms.

2105 Medical Typing

2 2 3

This course is designed to improve production typewriting ability with medical terminology. Problem and production techniques will include complex tabulation, statistical reports, rough draft, manuscripts, and forms.

2106 Legal Typing

2 2 3

This course is designed to improve production typewriting ability with legal terminology. Problem and production techniques will include complex tabulation, statistical reports, rough draft, manuscripts, and forms.

2124 Office Calculating Machines

2 2 3

This is a course designed for students interested in acquiring competence in the basic operations of adding and calculating machines representative of machines commonly used in American offices.

2125 Business Machines Applications

1 2 2

This is a follow-up course for Office Calculating Machines (2124) which provides the student with training in solving the kinds of calculating problems he may encounter in business.

2135 Production Typing and Machine Transcription

2 2 3

This is a lecture and laboratory course where students will transcribe machine-recorded dictation. Material will be progressively difficult with the objective of equipping students with a high degree of skill at transcribing all types of machine-recorded dictation. Correct use of grammar, spelling and letter format will be stressed along with the development of a high degree of productivity.

2137 Technical Dictation and Transcription

1 4 3

Development of the ability to write dictation, improve transcription techniques and skill, an introduction to specialized vocabularies and increased emphasis on speed and accuracy is covered.

2139 Legal Dictation and Transcription

1 4 3

This course is designed as a review of shorthand theory and specialized vocabulary development in the legal field.

2141 Shorthand I

1 4 3

This is an introductory course in shorthand including complete shorthand theory presented with emphasis upon reading and writing accurately with correct transcribing techniques. Students will be expected to reach a writing speed of 60-80 words per minute on practice material.

2142 Shorthand II

1 4 3

This course places emphasis in writing and transcribing dictated subject matter and the development of skill in formulating new outlines in accordance with the basic principles of Gregg shorthand. Extension of transcription techniques and practice as well as the essentials of good English principles are stressed. Students are expected to reach a speed of 80-100 words per minute.

2143 Shorthand III

1 4 3

This course is designed as an introduction to new matter dictation. Essentials of good English principles are stressed. Students are expected to reach a speed of 100-120 words per minute.

2144 Shorthand IV

1 4 3

This course covers advanced dictation and new matter improvement. Introduction to specialized vocabularies with increased emphasis on accuracy and speed is included.

2151 Medical Filing and Indexing

2 2 3

This course is designed as a study of medical terminology, coding systems, and methods of filing and indexing medical information.

2152 Office Practice**2 2 3**

This is designed as a finishing course emphasizing the skills, techniques and attitudes businessmen desire, in office workers including units of instruction in human relations, office machines, business correspondence, mailing, filing, sales department functions, telephoning, purchasing department functions, personnel department functions, and finding employment. Laboratory experience in applying skills and knowledges gained in previous business courses will be provided.

2153 Office Management and Procedures**3 0 3**

Management skills and techniques of business offices is emphasized. Human relations, personnel department functions and employment procedures are studied. Experience in applying skills and knowledges gained in office management situations will be provided.

2155 Medical Office Management and Insurance**3 0 3**

This course supplies the background for organization and management of a physician's office and introduces the student to governmental and individual types of health insurance coverage.

2193 Medical Dictation and Transcription**1 4 3**

The machine methods of taking dictation is taught. Emphasis is placed on the basic principles and theory of stenography stressing vocabulary building and machine transcription of medical records.

2201 Accounting I**4 0 4**

A comprehensive introduction to the fundamental principles of accounting as applied to the sole proprietor, including meaning and purpose of accounting, theory of debits and credits, journals, posting, accounts trial balance and financial statements is covered.

2202 Accounting II**4 0 4**

This course is a continuation of Accounting I emphasizing partnership accounting including surplus, dividends, stocks and bonds, departmental accounting, manufacturing accounting, budget analysis, interpretation of financial statements and supplementary statements.

2203 Accounting III**4 0 4**

This course provides a review of the accounting process, records, and the nature and content of accounting statements. The student develops skill and knowledge of accounting, including analysis of working capital, analysis and methods of valuation, and statement presentation of the following items: cash and temporary investments, receivables, inventories, current liabilities, investments, plant and equipment, intangible assets, deferred charges and corporated capital stock.

2204 Accounting IV**4 0 4**

This course covers advanced accounting principles related to partnerships, ventures, consignments, installment sales, statement of affairs, realization and liquidation reports, parent and subsidiary accounting, cost method of parent accounting, estates and trusts. Includes also an introduction to governmental and institutional accounting.

2211 Cost Accounting I**4 0 4**

This is a study of job-order cost accounting procedures, manufacturing overhead control, departmentalization, material control, labor control, and report forms.

2212 Cost Accounting II**4 0 4**

This is a study of process cost accounting, standard cost procedures, estimating and controlling costs through use of budget and profit analysis.

2221 Federal Taxation

3 0 3

The Federal Income Tax from both a managerial and an accounting viewpoint is studied.

2222 Income Tax I

3 0 3

Accounting procedure and problems connected with the Federal Income Tax Law and State Laws for individuals, proprietorships and partnerships are covered.

2223 Income Tax II

3 0 3

This is a study of the accounting procedure and problems connected with the Federal Income Tax Law and State Laws for corporations, estates, and trusts.

2231 Auditing

3 0 3

Public accounting organization and operation is studied, including internal control, internal auditing, verification of the balance sheet and operating accounts and the auditor's report of opinion.

2241 Personal Finance

3 0 3

This course is designed to assist in planning of personal expenditures, borrowing, budgeting, consumer buying, insurance, taxes, building estates, wills, savings and using financial institutions.

2242 Records Management

2 0 2

This course is designed to give the student a general background in the management of coding and filing systems, indexing systems, budget systems, and inventory systems.

2251 Business Principles and Organization

3 0 3

This course includes an introductory study and analysis of

our business system as a whole in relation to our economic society. It includes an introduction to business ownership, organization, principles, problems, management, control, facilities, administration, and practices to develop an understanding of American business enterprises and their functions.

2255 Introduction to Management

3 0 3

This course includes basic principles of management as applied to retailing, wholesaling, internal organization, distribution, and financing. The course deals with the theory and practice of leadership with some emphasis on problem solving, decision making, creativity and leadership philosophy.

2271 Risk and Insurance

3 0 3

The various types of insurance, including life, health and accident, hospitalization, fire and storm, burglary, liability, automobile, marine, types of insurance companies, types of coverage, problems, government regulations, are covered. This is an introductory course for further study in a specialized field.

2281 Business Law I

3 0 3

This course includes the study of contracts, negotiable instruments, and sales of property. Legal situations encountered in the performance or breach of a contract, securing of credit, and problems met when marketing goods is covered.

2282 Business Law II

3 0 3

This course is a continuation of Business Law I with stress on topics which include agency, partnerships, and corporations. Concentration is on the relationships of principles, agents, and third parties.

2283 Criminal Law**3 0 3**

This is an introductory course concerning the basic principles of criminal law and their application to individuals, including torts, petty, and grand larceny and homicide.

2292 Field Project and/or Case Study**0 10 5**

The student will be given a special project or case study specifically related to the occupational area. The course should be a field project within the framework of actual working experience in business or industry or a research type case study including data collection and data analysis.

2301 Introduction to Data Processing**2 2 3**

This course covers the history of data processing, scope and significance of data processing, punched card unit records, electronic data processing equipment and basic computer concepts.

2306 Introduction to Data Processing and Programming**3 4 5**

This course is designed to give a general introduction to acquaint the students with the development of basic computer systems and provide a foundation for detailed study of specific systems. Topics include historical points, computer codes, core storage, disk, drum, and other random access systems; central processing unit, fixed and variable word length computers, input-output devices, stored program concepts, and programming systems.

2307 Computer Operations**3 6 6**

The student will learn actual computer operations and will become proficient in handling and setting up complex disk and tape file runs. The student will learn to run book and message control functions and to read job descriptions and flow charts.

2308 Computer Programming I

3 4 5

This course covers writing, testing, debugging and documentation of computer programs. Extensive laboratory experience builds the confidence of the student to perform the problems presented.

2309 Computer Operator Techniques

3 6 6

This course will place emphasis on developing and understanding of systems, computer operations, and operating systems necessary for operations work in data processing centers in business and industry. Extensive use will be made of typical case problems.

2310 Computer Programming II

3 4 5

Students will develop skills in writing more complex programs and learning special techniques involving multiple level control breaks, multiple record input, arithmetic calculations, balancing methods and general data processing business procedures.

2311 Principles of Unit Record Systems

3 0 3

This course covers detailed work in punched card data processing. Topics include wiring and operation of basic card machines, use of card-oriented systems, card design and layout, punched card machine functions, level breaks, and procedure development.

2312 Flow Chart Systems

3 0 3

Number systems, flow chart development, computer-related mathematics, logic and sets will be covered.

2315 Computer Programming III

3 4 5

This course is a continuation of Computer Programming II with emphasis on program optimization and multi-file

techniques. Programs of some complexity will be written, compiled, and executed by the students.

2320 Computer Programming IV

3 4 5

The student will be required to write and test the most sophisticated job runs permissible on the type equipment available. This will be done using the highest level languages available. Use will be made of vendor utility routines such as sorts, file organization and an operating system if available.

2325 Computer Programming V

3 4 5

The purpose and function of various programming systems, program compilers, report generators and utility programs are covered. Operating systems, their purpose, structure and various functions are studied.

2340 Data Processing for Managers

3 0 3

This course is designed to familiarize managers with the principles of business data processing equipment and their uses. It provides management with an insight into the use of data processing equipment for management decision making. Methods and techniques used in applying business problems to data processing equipment will be presented. Computers and unit equipment will be used to familiarize the student with data processing.

2360 Systems Analysis and Design I

3 4 5

Functions and techniques of systems analysis, design, and development will be covered. Topics include system flow charting, data collection techniques, file design and management, determination of processing and equipment requirements, and communication and reporting methods. Typical business information problems will be examined using case studies.

2361 Systems Analysis and Design II

3 4 5

Advanced concepts in management information systems will be covered. The student will study systems applica-

tions, data capture equipment, teleprocessing equipment, time-sharing systems, and total integrated information systems concepts.

2701 Introduction to Libraries

5 0 5

This course is an introduction to all major phases of library operation, especially as they pertain to the role of "Library Aide." Units include library history, governmental and legislative relationships, financial structure and systems, technical and public services, library systems, organizational patterns, physical plants, public relations and media systems.

2702 Introduction to Library Technical Services

5 0 5

The student receives an introduction to techniques of library operation. Units include orders and acquisitions, cataloging and classification, filing, shelving, design and use of card catalog, materials handling, mending, automation, serials control, government documents and other "non-book" materials. Prerequisite: Introduction to Libraries (2701).

2703 Introduction to Library Public Services

5 0 5

This course is an introduction to public services in library operations. Unit includes a study of services peculiar to different types of libraries (e.g. SDI systems for special libraries), hardware applications, circulation operations, information services, reference services, arrangement of materials, inter-library loan systems, personnel requirements and human relations.

3005 Principles of Retailing

3 0 3

Topics covered are business location, building fixtures and equipment, store layout, retail management organization, purchasing procedures, merchandise discounts and ordering policies, product inventory control systems, planning the merchandise budget, receiving, checking, and marketing merchandise, retail store promotions, pricing, retail store services, and trends in marketing.

3007 Principles of Wholesaling**3 0 3**

This is an advanced study of the evolution, economic status, and management of non-retail marketing, the position of wholesaling in distribution, kinds of wholesaling, types of middlemen, internal organization and operation of wholesalers, trading areas, and an advanced analysis of the relationship between marketing policies of wholesaler and manufacturer and changing patterns of wholesale distribution.

3015 Small Store Management**3 0 3**

The principles of operation and management applicable to small stores are studied. Special attention is paid to investigating business opportunities, organizing, financing, and controlling small business. Group projects are investigated by students in areas such as financing, incorporating, and obtaining legal advice.

3019 Merchandise Buying**3 0 3**

Analysis is made of the principles and methods that determine successful merchandise selection. Included in the study are organizations for buying, knowing what to buy, determining where and how to buy, and the aspects of merchandising involved in selling.

3020 Credit Procedures**3 0 3**

Principles and methods of credit administration in the mercantile and retail field, including sources of information, credit policy, credit control, legal remedies, and collection techniques are covered.

3025 Salesmanship I**3 0 3**

Selling in the American Economy, salesmanship, the salesman's job and qualifications, the consumer's wants and make-up and the effect of these areas on the entire field of business are studied.

3026 Salesmanship II**3 0 3**

This is a survey course of sales and the techniques of selling a service. Equal stress is placed on selling the product as well as selling the service. The course covers all phases of the sales including approach, demonstration, close and departure. A short selection is given on development of the personality and the art of selling one's self.

3027 Textiles**3 0 3**

The student studies natural and whole fibers, synthetics, blends of synthetics and natural fibers. The course will provide a background in the subject as applied in the field of fashion as well as merchandising.

3028 Fashion and Merchandising**3 0 3**

This course is designed for students interested in a career in fashion, and trains the student for work in retailing, fashion coordinating, manufacturer's representative, purchasing, sales, fashion advertising or fashion illustrator.

3029 Modeling and Speech**3 0 3**

This course introduces the student to fashion terminology. Modeling techniques are taught as they will apply to the student's career interest. The student will be given a background in domestic and foreign fashion.

3050 Principles of Purchasing**3 0 3**

This course is a study of the organization and operation of a purchasing department. Policies dealing with inventory control, vendor relations, purchasing responsibilities, evaluation of suppliers, source selection, value techniques, standardization, scrap disposal, contract legalities and negotiations are covered.

3100 Principles of Advertising**3 0 3**

The purposes of advertising, the economic and social aspects of advertising, slogans, trademarks, idea visualization, the mechanical production of advertisements, the media plan, newspaper advertising, radio advertising, television advertising, direct mail advertising, outdoor advertising, packaging and labeling, and the advertising campaign will be covered.

3102 Display Advertising**2 2 3**

This practical applications course in the field of advertising and display includes scope and purpose of advertising, measurement of effectiveness, advertising media, costs, circulation data, schedules, cycles, layout, packaging, agencies, advertising laws, elements and principles of display, counters, showcases and lettering.

3440 Marketing I**4 0 4**

This course is an introduction to the problems of manufacturers, wholesalers, and retailers as they relate to marketing goods and services. Attention is paid to channels of distribution.

3441 Marketing II**4 0 4**

A continuation of Marketing I (3440). Types of business enterprises, how to enter business, competition, pricing market research, credit policies, and management techniques are discussed.

3442 Marketing III**4 0 4**

This portion of marketing considers the distributive structure, the pricing system, promotional activities, and planning and evaluating of the marketing effort.

3500 Introduction to Hospitality Careers**1 0 1**

This is a study of the hotel, motel, and restaurant hospitality field, its history, famous people and the socio-economic importance of its operation. The student is provided with a general understanding of organizational structures and its related services and management techniques.

3518 Menu Planning**2 0 2**

The student plans and studies menu layouts, designs, and adapts menus to cultural backgrounds of locations and clientele. Professional planning is emphasized. Nutrition balancing, cyclic and static menu uses, "specials," and "loss leader" items will be covered in addition to consumer menu pricing.

3524 Dining Room Procedures**1 2 2**

This course provides the student with methods of the American and European Plans; table arrangement for all types of functions is studied in addition to waiter-waitress protocol. The more formalized French silver service, continental buffet and white glove occasions are also included.

3550 Nutrition I**2 0 2**

This is an introductory course in nutrition which covers determination of individual requirements for energy protein, minerals, and vitamins; foods as a source of daily requirements; and the relationship of food and nutrition to optimal physical fitness.

3551 Nutrition II**2 0 2**

This is an advanced course in nutrition. Prerequisite: Nutrition I (3550).

3552 Volume Food Management**3 0 3**

This course is an introduction to the various types of large volume food service institutions, with emphasis on operational differences, varied menu construction, raw material estimates, large volume preparation techniques, and the use of institutional food service equipment. Requirements for the refrigerating of perishable food and the mechanics for requisitioning and controlling volume purchases are taught.

3560 Culinary Arts I**3 0 3**

Sanitation and personal hygiene rules and practices are a part of the student's learning throughout training. Rules in strict accordance with local and state Board of Health regulations are taught. Sanitation requirements for the refrigerating of all perishable foods and the mechanics for receiving and issuing requisitions and controls are taught as are inventory control methods.

3561 Advanced Culinary Arts I**0 10 5**

This is a continuation of course 3560 for students specializing in culinary arts as a cook, baker or chef.

3562 Culinary Arts II**2 2 3**

Learning experiences are keyed to the basic fundamental preparation of rolls and bread. The student is taught to prepare such desserts as tortes, cakes, fruit, chiffon, cream, soft and specialty pies, cookies and puff pastry desserts. Included is the baking and preparation of quick breads, such as biscuits, corn bread and muffins. Attention is paid to the care, sanitation and maintenance of equipment involved in the cooking of these foods.

3563 Advanced Culinary Arts II**1 8 5**

This is a continuation of course 3562 for students specializing in culinary arts as a baker or chef.

3564 Culinary Arts III

2 2 3

This course emphasizes various grades of meats, cuts, and their uses under certain circumstances. The differences between primal and fabricated cuts are taught. Fabricating of meat cuts is taught with the student performing the fabrication.

3565 Advanced Culinary Arts III

1 8 5

This is a continuation of course 3564 for students specializing in culinary arts as a cook or chef.

3566 Culinary Arts IV

2 2 3

This is an introductory course in the preparation of meat and meatless entrees. The cooking of poultry, beef, pork, lamb, veal, and seafoods are taught as sub-sections in this course. The student will learn the basic entrees for each meal as well as the method of cooking by frying, baking, broiling and steaming. Short order cookery in the preparation of breakfasts and other meals which require quick preparation and service is included. The student will concentrate on learning to work on a grill with speed and efficiency.

3567 Advanced Culinary Arts IV

1 8 5

This is a continuation of course 3566 for students specializing in culinary arts as cook or chef.

3568 Culinary Arts V

2 2 3

This course teaches the types of stocks, the making of stocks, and their use in the preparation of soups and sauces. The derivatives from the sauces are emphasized. The student learns the important factors of blending flavors together and the artful skill of tasting the end product.

3569 Advanced Culinary Arts V

1 8 5

This is a continuation of course 3568 for students specializing in culinary arts as a cook or chef.

3570 Culinary Arts VI

1 4 3

In this course the student learns the techniques and methods of preparing, cooking and merchandising many varieties of vegetables. Both the vegetable and non-vegetable types of salads are taught in conjunction with vegetable preparation and merchandising. This course covers appetizers, hors d'oeuvres and other cocktail tid-bits. The student is given instruction in the handling of equipment used in this area of food preparation.

3571 Advanced Culinary Arts VI

1 8 5

This is a continuation of course 3570 for students specializing in culinary arts as a cook or chef.

3580 Buffet Preparation and Service

1 2 2

The difference between regular and classical buffet foods are discussed and prepared. Careful selections in combining foods for nutritional value along with creative abilities in decorative pieces and ice carvings are presented. Creative table display setups are arranged. Floral arrangements and eye-appealing layouts are the core in the presentation of this course.

3586 Internship for Restaurant Management

1 10 6

This course provides experiences in restaurant management under the direction of a qualified manager and the college supervisor. The student will become involved in processes such as customer relations, employer relations, front office procedures, housing management, food management, advertising, sales promotion and maintenance techniques.



6001 Techniques of Supervision I

3 0 3

This is a course covering management development. The material covered is directed toward the responsibilities of any supervisor or potential supervisor, and includes responsibilities of the supervisor, functioning within an organizational structure, communications, job management, delegation of authority, interviews, or orientating and inducting new employees, training employees, work improvement and evaluation of employee performance.

6004 Manufacturing Organizations and Management

3 0 3

An in-depth study, the course is oriented to the first line supervisor who is interested in the inter-relationships of the various departmental functions and the overall management problems encountered in a manufacturing organization. It includes the mid-management functions of marketing, engineering, production control, purchasing, production and industrial relations, quality control, cost control, the establishment of lines of authority, duties and responsibility and rules for charting an organization structure.

6008 Techniques of Supervision II

3 0 3

This course provides an intensive streamlined coverage of desired supervisory practices in developing skills to instruct and train employees properly. A four step method of instructing employees to do their job quickly, correctly, and conscientiously is presented. The course is not intended to provide any training in "knowledge of work," but to cover methods of job instruction and special problems with regard to working conditions, long operations, noise and problems of "feel."

6010 Industrial Safety and Fire Control

3 0 3

This course covers considerations of managerial and supervisory responsibility for fire and accident prevention covering topics such as the investigation of accidents, preparation of accident reports, machine guarding, the use of personnel protective equipment, conformity to state industrial

accident code and fire regulations, provision for first aid, the use of safety committees, and the methods of developing, advertising and promoting a good safety and fire prevention program.

6012 Labor Management Relations

3 0 3

The purpose of this course is to explore the development and application of the labor laws and practices that form the basis of modern-day industrial relations. Among the topics to be considered are the history and development of organized labor, Federal labor legislation, Labor-Management Act, Wage-Hour, civil rights, state laws and regulations, local regulations, Federal Pre-emption Doctrine, National Labor Relations Board, Federal Mediation and Conciliation Service, the organizing drive, the strike, collective bargaining, anatomy of a labor agreement, handling in-shop grievances, and arbitration.

6014 Purchasing and Inventory Control

3 0 3

This course is designed to provide a practical approach to procurement with regard to price, quality, quantity and delivery. Personal ethics, legal aspects of contracts, records, performance, and foreign procurement standards are discussed in detail. The role of the purchasing section or department, as a member of management's value analysis team, is studied in-depth.

6016 Manufacturing Costs and Value Analysis

3 0 3

The course is designed to provide an organized effort to get more for your money. It applies recognized techniques and tests to measure value and thus eliminate unnecessary costs in design, development, and manufacturing without affecting quality. It differs from cost control because it is directed toward analyzing value — not cost. This course stimulates faster action in bringing about changes that would not come to pass in the normal scheme of things. It is the cooperative effort of all individuals to attain one goal — the maximum value per dollar.

6018 Production and Inventory Control**3 0 3**

This course is designed to bring the range of concept and techniques to a point of useful application in the practical design of production planning, inventory control systems, and follow-up. The concepts and methods described will be drawn from the very adequate dual source of test and experience.

6020 Quality Control**3 0 3**

This course places emphasis on the principles and techniques of quality control to fulfill the organizational objectives of completing the job correctly the first time. The purpose of the course is to provide unit managers and supervisors with an understanding of the use of scientific quality control. Topics covered include vender-customer relationships, sampling inspections, process control and tests for significance.

6022 Techniques of Supervision III**3 0 3**

This course was developed to prepare persons to effectively and efficiently function as conference leaders and to gain maximum utilization of time and effort. Methods and techniques for conducting small or large meetings are covered.

6030 Economics of Industry**3 0 3**

A course in fundamental economics is necessary to appreciate the basic principles of a business system. Everyday terminology is used and emphasis is placed on practical portions of economics as opposed to theoretical. Subjects covered include various types of business organization, costs and pricing, competition, money system, taxes, productivity, automation. Text reading, group discussion, case studies, and lectures are used in conducting the class.

6034 Motion and Time Study**4 0 4**

The goals of motion and time study will be in the "Practical Application" area, using actual shop practice basis for the establishment of rates. The subjects will include elemental breakdown sheets, leveling factors, variables, M.T.M. application, standard data, general purpose data, sampling study, direct and indirect standards, and graphical expression. Motion and Time Study will encompass most homework assignments to enable the student to have a good background for "methods improvement" application.

6035 Job Analysis and Evaluation

3 0 3

This course covers the principles of job analysis establishing proper job description and developing job content, requirements and limitations. The evaluation studies cover various approaches to job evaluation such as ranking factor or point comparison and the relationships of results to wage scales.

6038 Work Simplification

3 0 3

The supervisor's responsibility for job methods improvement, with emphasis on the basic principles of work simplification, motion study fundamentals and time study techniques will be studied. Use of flow and process charts, multiple activity charts, operation charts, flow diagrams and methods evaluation are included among the subjects to be discussed.

6040 Plant Layout and Process Planning

3 0 3

Factory planning with emphasis on the most efficient arrangements of work areas to achieve lower manufacturing costs are studied. Layouts for small and medium-sized plants, layout fundamentals, selection of production equipment and materials handling equipment will be covered. The principles, practices and methods of process planning are included as well as tooling determination, operational sequence, setup and operational time, routing forms and interpretation of charts, and process analysis of selected jobs.

6042 Traffic and Transportation Management**3 0 3**

This course is presented for the development of personnel associated with or working in the transportation and traffic management field. The course is designed to cover intermediate management, technical development and other phases of transportation organizations. It includes discussions covering the American transportation system, Federal regulations, freight traffic territory, freight classification, principles of freight rates and tariffs, shipping documents and their application, special freight services, and a study of freight claims.

6046 Shop Mathematics and Slide Rule**3 0 3**

This is a "refresher" course in basic arithmetical processes, shop application of geometry and trigonometry, and the basic functions of the slide rule. Trainees will be given actual practice in the use of the slide rule for practical problem solving.

6052 Office Management**2 0 2**

This course helps prepare students for supervisory and administrative positions in offices. The course provides instructions and procedures on information and records processing, communications, office services, automated office equipment, the relationships of office functions, and office facilities. In addition, communications problems, as well as human relation principles relative to office personnel are discussed.

6220 Fundamentals of Interior Design I**2 2 3**

The student receives an introduction to the study and application of furniture forms, color analysis for interiors, fabric patterns, surface textures, and accessory scale. An analysis of interior decoration as it exists today in terms of career opportunities is made.

6221 Fundamentals of Interior Design II**2 2 3**

A concentrated study of furniture, fabric patterns and textures, lighting, and accessories with emphasis on styles and periods is made.

6230 Textiles I**2 2 3**

The student studies textiles, their fiber content, uses, characteristics and care. Interpretation of textile laws and the regulations on labelling are covered.

6231 Textiles II**2 2 3**

This course places emphasis on textiles as they relate to the field of interior decoration. Physical properties and characteristics of carpets, wall coverings, upholstery, and draperies are covered.

6232 Advanced Textiles (Studio Procedures)**1 4 3**

A comprehensive study is made of textiles as applied to interior design with special emphasis placed on the relationship of color, fabric texture, and furniture. The three major categories of floor covering and different carpet weaves will be studied. Practical problems are given on the proper method of estimating and installing carpet, and construction techniques, estimating, and selection of draperies.

6240 Fundamentals of Structural Design I**2 4 4**

The fundamentals of drafting and use of drafting equipment as applied to interior design is studied. Basic knowledge of architectural styles and concepts is covered.

6241 Fundamentals of Structural Design II**2 4 4**

Students study the formation of a set of residential floor plans, layout, site selection and final design drawings.

6250 Consumer Education for Interiors

2 2 3

The general factors influencing quality buying for interiors are studied. Materials and trends are examined in relation to needs of consumers.

6260 Furniture Selection and Arrangement I

2 2 3

The students study furniture selection and arrangement within residential and commercial interiors. The course includes the study of functions, versatility, combination of furniture styles, effects of lighting, picture hanging, and accessories, and the practical application of principles learned.

6261 Furniture Selection and Arrangement II

2 2 3

The students receive practical application in analyzing existing conditions of interiors or areas. They work with basic floor plans and assigned furnishings to be arranged with advancement to floor plans of various types.

6270 Applied Interior Design I

2 6 5

This course provides actual experience in designing interiors with consideration for personality and functional needs of client. It includes the application of knowledge of furniture forms, floor plans, color analysis, fabric patterns, surface textures, budget factors, and accessory selection.

6271 Applied Interior Design II

2 6 5

This course provides for actual design projects in entirety with complete description of background of client. This includes a formal presentation, defense of design presented and the responsibility for meeting a completion date.

6280 Display I

3 4 5

The students study the basic principles governing displays and the special techniques required in carrying out display work. They learn the types of equipment that can be used in developing successful displays.

6281 Display II

1 4 3

A continuation of Display I (6280) with emphasis placed on the practical application of the principles and techniques learned for creative display work.

6285 Retailing

3 0 3

The students study the structure of retailing and the variety of problems associated with the management of retail stores of various types.

6307 History of Art I

2 0 2

The student studies art from prehistoric times through Greek and Roman times. A view of the art of different eras in light of cultural backgrounds and interrelation of major periods of art history is presented. A study of the major changes reflected in the art of the times is included.

6308 History of Art II

2 0 2

A continuation of History of Art (6307), this course covers early Christian and Byzantine art to the present.

6309 Printing Production

2 8 6

Each student is given or selects production tasks in the graphic arts area. He practices the actual working procedure he will use in his prospective employment by drawing on previous instruction in the graphic arts program with the aid and guidance of the instructor.

6310 Art Processes

3 0 3

Students become acquainted with art and printing processes as they may be used in internal industrial printing departments and by production advertisers. Jobs are accomplished in preparing illustration copy, special effects, line and halftone, and keyline drawing for four-color separations.

6311 Composition and Design I

2 0 2

The student studies the basic elements of two-dimensional design and the use of these basic elements in creative work as related to the field of interior design.

6312 Composition and Design II

1 4 3

Three-dimensional concepts, color optics, color dynamics, the illusion of 3D and the actuality of the 3D form and the use, limitations, and physical manufacture of 3D forms are studied.

6313 Printing Production II

2 8 6

A continuation of Printing Production (6309).

6314 Printing Estimating

3 0 3

Estimating of each individual part of a printing job, putting it all together to come up with the entire cost of the job, making out of requests for estimates for jobs and of estimate sheets for the customer are studied. Such items as paper costs, type setting costs, press costs, and bindery costs are part of the course. The use of Franklin catalogs for letterpress and lithography is taught.

6315 Basic Drawing I

0 6 3

The student will develop basic drawing skills with the pencil and charcoal and will deal with the quality of line, the mass of volume and the control of values.

6316 Basic Drawing II

0 6 3

A continuation of Basic Drawing (6315) with further experience in the use of felt pens, chalks, conte crayon, pen and ink with the emphasis on the quality of descriptive sketching. Will show the difference between the sketch used as finished art and the sketch used as a layout for the illustration.

6318 Introduction to Illustration I

3 0 3

This is an introductory course in media-watercolor, tempera, polymer and inks.

6319 Printing Production III

2 8 6

A continuation of Printing Production (6313).

6323 Illustration II

1 4 3

Concentration will be in the painting media with exploration of various techniques with the brush. The value and advantage in using each technique and medium will be studied.

6324 Illustration III

1 4 3

The student receives concentrated work in black and white illustration with techniques in pen and ink, dry brush, chalks, designers colors, pencil with the use of mechanical materials. Some work in line-converted photos and their use and the use of overlays in using a second or more colors to black and white artwork is included.

6327 Illustration IV

1 4 3

This course covers techniques and handling of airbrush rendering and photo retouch. Students will have experiences in both black and white and color. Extensive use of mask-

ing techniques and supplementary brush work and use of combined media is included.

6328 Illustration V

1 4 3

This course is directed toward student interests in specific media. It affords an opportunity to develop proficiency in one or possibly two areas.

6329 Life Drawing I

0 6 3

The undraped figure, its uses in the layout form and the finished art version are studied. The course will deal with the natural movements and positions of the figure and the line figure versus the shaped figure.

6330 Life Drawing II

0 6 3

This course is a study of the draped figure as compared to the undraped figure. The action of the figure upon clothing and the use of figure sketching to finished sketch and illustration is covered.

6335 Trouble Shooting Techniques for Graphic Arts

2 2 3

Press operators become familiar with manufacturers' instruction manuals. Emphasis is placed on pinpointing problems and searching for solutions in a systematic process. Problems and possible causes and effects are studied.

6339 Layout Design I

3 0 3

This course deals with the basic concepts of layouts, how they relate to finished art and the use of various media and techniques of layout.

6340 Layout Design II

3 0 3

The emphasis will be upon the comprehensive layout and its relation to the finished printed brochure. All the ef-

forts will be directed toward developing the student capacity for neat, well-designed layouts.

6345 Keylining I

3 0 3

This course covers analysis of requirements and practical lab work in the preparation of art and mechanicals for camera copy. A specific effort will be made to familiarize the student with typography and the spacing and selection of type.

6346 Keylining II

3 0 3

This advanced course in keylining concentrates on the practical preparation of keylines in relation to the printer. Classroom discussion will deal with practical considerations for keylining. The responsibility of the artists and the printer is defined. Laboratory work will be concerned with producing accurate keylines ready for camera.

6350 Photography I

3 0 3

This basic preparatory course in photographic fundamentals covers the theory and practical applications of basic camera types. Picture taking, exposure determination, processing, and introduction to the media of the field are introduced.

6352 Photography II

3 0 3

Advanced photo procedures.

6353 Photography III

3 0 3

Photo procedures and their relations to the reproductive processes.

6374 Color Theory

2 4 4

This course includes an intensive exploration of color —

theory, expression, range, key and psychology — as related to the individual and family with respect to living with color. Practical application of problems in the use of color is covered.

6375 Camera and Stripping

3 0 3

In this course the student is given instruction and practice in camera operation methods and techniques. Most work is done in four colors. Production runs of special materials are accomplished.

6380 Graphic Techniques

2 4 4

Fundamentals of lithographic stripping, mechanical drawing, typographical layout, opaquing, ruling and terminology understanding are emphasized. Offset applications are paramount in skill development. This course must be taken in concurrence with Copy Preparation and Proofreading (6382).

6381 Typography

2 0 2

Type, what it is, sizes, different methods, spacing, line count, and lab experience in lettering type faces for layout are taught.

6382 Copy Preparation and Proofreading

2 6 5

Skills learned are applied to copy to be run on the offset press. Proofreading techniques and proof marks are introduced. The student learns to set up and operate the proof-press. This course must be taken in concurrence with Graphic Techniques (6380).

6388 Lithographic Press Operation I

2 8 6

Demonstrations and practices provide the student with experience in making press adjustments such as bearer pressures, gripper adjustments, pressure adjustments, timing adjustments, proper plate and blanket packing, and a

study of possible causes and cures of paper distortions. Through actual press operation, effectiveness of proper adjustments can be analyzed.

6389 Lithographic Press Operation II

2 8 6

A continuation of Lithographic Press Operation I (6388).

6390 Lithographic Presswork

1 10 6

Instruction on the mechanical operation of various offset presses is given. A practical study is made of feeder operations, conveyors, register systems, ink rollers, dampener adjustments, lithographic plate handling, the printing unit, and delivery systems on offset presses.

6400 Area Concentration

3 0 3

A senior student's time is spent in concentrated effort on an area that he feels he wants to pursue. An outline of what he wants to accomplish for the course should be submitted.

6401 Electrical Blueprints

2 4 4

Industrial and Commercial electrical symbols are studied and typical drawings are interpreted. Architectural electrical symbols, J.I.C. Standards symbols, E.I.A. symbols, one-line drawings, and N.E.M.A. motor and enclosure symbols are studied. (J.A.C. — Joint Industrial Council; E.I.A. — Electronics Industry Association; N.E.M.A. — National Electrical Manufacturers Association)

6402 Related Drafting

2 0 2

This is a practical course in basic skills of drafting related to the occupational area of the student.

6403 Drawing Fundamentals

2 6 5

The fundamentals of drawing are studied. Basic skills are developed in the use of fundamental drawing equipment. Lettering, third angle projection, sectioning, beginning dimensioning, scale drawing, intersections, are covered.

6404 Electronic Drafting Fundamentals

1 4 3

This course introduces the basic principles of drafting and covers their application in relation to electronic drawings.

6405 Technical Drawing I

2 8 6

This course covers the uses of drafting equipment, free hand lettering, shape description and free hand sketching. The importance of complete and accurate drawings is stressed.

6406 Technical Drawing II

2 8 6

This course covers problems and projects involving multi-view and pictorial drawings. A portion of the course includes descriptive geometry.

6407 Technical Drawing III

2 8 6

Detail and assembly drawings, stock lists, springs, weldments, and catalog items are studied.

6408 Technical Drawing IV

2 8 6

This course covers basic jigs and fixtures, bearings, gears and cams and methods of precision measurements.

6409 Technical Drawing V

2 8 6

The design of cutting tools, electrical and piping diagrams, special machines and the finished product are covered.

6410 Technical Drawing VI

2 8 6

This course covers the planning and designing of dies, including piercing and forming, die cast and plastic mold dies.

6411 Blueprint for Machinists

2 0 2

This course covers relationship of views and details, interpretation of dimensions, transposing scale, tolerances, symbols, schematic diagrams, sections, material symbols and material lists as related to machine trades.

6412 Blueprint for Tool and Die

2 0 2

Relationship of views and details, interpretation of dimensions, transposing scale, tolerances, symbols, schematic diagrams, sections, material symbols and material lists as related to tool and die are taught.

6420 Architectural Drawing I

2 8 6

This course covers the uses of drafting equipment, free hand lettering, shape description and free hand sketching. The importance of complete and accurate drawings is stressed.

6421 Architectural Drawing II

2 8 6

Problems and projects involving multi-view and pictorial drawings are covered. A portion of the course includes descriptive geometry.

6422 Architectural Drawing III

2 8 6

This course covers the planning and design of a residence including size, space relationships and costs. A complete set of working drawings shall be the objective.

6423 Architectural Drawing IV

2 8 6

This course covers the planning and design of a motel including size, space relationships and costs. A complete set of working drawings shall be the objective.

6424 Architectural Drawing V

2 8 6

This course covers the planning and design of a school including size, space relationships and costs. A complete set of working drawings shall be the objective.

6425 Architectural Drawing VI

2 8 6

In order to provide an atmosphere of "the world of work," teams of students complete a set of working drawings. A job captain is chosen from among the most deserving students. This design includes commercial, light industry, or office building design as approved by the instructor.

6428 Mechanical & Electrical Equipment

3 0 3

This course covers the mechanical and electrical systems in a structure. Plumbing, heating and cooling and electrical systems will be studied. Mechanical and electrical drawings will be studied.

6430 Building Materials & Applications

3 0 3

This course covers the basic architectural and structural construction materials and their applications. Building materials will be considered for usability and cost feasibility.

6432 Architectural Renderings

1 2 2

Presentations are made using pictorial drawings, scale models, color and material schemes.

6434 Architectural Estimating

2 1 2

The student is introduced to basic estimating procedures as they apply to the Architectural Construction Industry and methods of construction.

6435 Manufacturing Planning and Estimating

1 2 2

The student studies manufacturing processing, planning and analysis and cost estimating.

6436 Structural Design

3 0 3

This course covers statics and strength of materials. Vectors, stress, strain and the elasticity of materials will be considered in the basic structural design problems.

6437 Contracts & Specifications

3 0 3

This course covers contracts and specifications as they relate to plans, building codes and actual construction. Basic relationships between specifications and working drawings will be considered from a legal and working standpoint.

6439 Architectural History

3 0 3

Architectural development, past and present, in terms of the influence wielded by environment and culture are covered.

6444 Surveying and Measurements

1 2 2

This course covers the proper use and care of basic surveying equipment, including the level and transit. Field problems will be recorded in field notebooks and translated into records and drawings.

6462 Statics and Strength of Materials

5 0 5

This course covers the basic laws of statics as applied to the systems of coplanar force systems and friction. Centroids and center of gravity of solids are discussed in relation to force systems. Strength of Materials covers the properties of materials and the simple stresses and strains to which these materials are subjected.

6464 Mechanisms

2 0 2

This course covers the use of cams, gears, bearings, pawl and ratchets, linkages, and drive trains producing rotary, reciprocating or oscillating motion. Space requirements and velocity factors are included.

6478 Layout and Inspection

3 0 3

Terms such as tolerance, fits, allowances, interchangeability, are considered in their relationship to inspection procedures. Production inspection is covered in depth with the introduction of gauge inspection where applicable.

6479 Hydraulics and Pneumatics

1 2 2

This course covers fundamentals of fluid power including principles, functions, terminology and symbols of hydraulics and pneumatics.

6481 Manufacturing Processes

3 0 3

This course covers basic materials and the machines that perform the following processes: rolling, forming, casting, molding, machining, welding, heat treating, plating, and tape controlled machines.

6490 Machine Design Principles

2 0 2

Machine design principles are taken up in this course. Emphasis is placed on the control, devices, dimensions, electrical hydraulic, mechanical components, design aids, and functions related to machine products.

6496 Basic Machining

1 4 3

This course covers the operations of lathes, boring mills, drill presses, milling machines, shapers, planers, broaches and grinders. Their performance in the proper operational sequences, including the required tooling, is studied.

6497 Design Problems

1 4 3

This course covers typical job situations including group participation. This shall possibly include the redesign of existing products or the design of new products or concepts.

6499 Quality Control

5 0 5

This course covers the principles and techniques of quality control. Other topics covered include vender-customer relationships, sampling inspections, process control and tests for significance.

6502 Electricity

2 4 4

This course is a study of the basic concepts required of the electrical worker. Particular emphasis is placed on the concept of series circuits, parallel circuits, series parallel combination circuits and Ohm's Law. The basic definitions of electromotive force, current and resistance receive special attention.

6503 AC and DC Machines and Controls

3 6 6

Characteristics of generators and motors are introduced. Motors and control methods are studied and compared with emphasis on full and reduced voltage magnetic controls.

6504 Electrical Maintenance

3 4 5

Preventive electrical maintenance programs are developed for typical industrial and commercial situations. Related meters and test equipment are studied both for preventive and trouble shooting applications. Protection of life, property, and production are emphasized as primary goals.

6505 AC/DC Fundamentals

3 6 6

Alternating and direct current theory and practice are covered. Ohm's Law, meters, batteries, generators, power systems, and transformers are stressed.

6506 Electronics I

6 0 6

This course provides the student with the most basic concepts required of the electronics worker. Particular emphasis is placed on concepts of series circuits, parallel circuits, series-parallel combination circuits, soldering, techniques and assembly as it applies to the beginning electronics student.

6507 Electronics II

6 0 6

Materials to be covered include basic principles of alternating current, mathematics for AC applications, vectors, phase relation, inductive reactance and impedance, capacitive reactance and impedance, alternating current circuits, AC circuit analysis, AC motors and generators, AC power systems, resonance in series circuits, resonance in parallel circuits, transformers, theory and application.

6508 Electronics III

6 0 6

The construction of bread boards, basic lab techniques and the use of test equipment will be taught. Materials to be covered include rectification and detection, diodes, amplification, oscillation, vacuum tube and semi-conductor characteristics and curves, and tuned circuits.

6509 Electronics IV

6 0 6

Materials to be covered include power supply circuits, basic amplifiers, basic oscillator circuits, audio systems, AM and FM transmitters and receivers.

6510 AC and DC Machines and Controls II

3 6 6

Specific applications of motors and generators are studied. Multi-speed variable speed, synchronous, and wound rotor are among the types of motors studied. Electrical and mechanical braking and clutches are covered. Solid state motor control is introduced.

6512 Electronics V

6 0 6

Materials to be covered include non-sinusoidal waveshapes; multivibrators and flip-flop circuits; special oscillator circuits; blocking, shock-excited, wave shaping circuits, clip-pers, limiting circuits, clamp circuits, counters, television transmitters, television receivers.

6513 Electronics VI

6 0 6

This course will take the components and simple, new work which the student has been exposed to and show how they are combined to form systems used in industry. The function of timed circuits, deletion, counting circuits and motor control circuits, will be covered. Material to be covered include time delay circuits, voltage regulation and industrial rectifiers, industrial control devices — tubes and semiconductors, motors and generators, electronic motor controls,

photoelectric circuits and controls, resistance welding controls, high frequency applications — induction heating, X-ray, numerically controlled machines, synchro motors and control systems, servo control devices and systems, microwaves and radar in industrial applications.

6514 Vacuum Tube and Semi-conductor

Fundamentals

3 6 6

This course covers basic lab techniques and the use of test equipment, including rectification and detection, diodes, audio amplification, oscillation, vacuum tube and semi-conductor characteristics and curves and tuned circuits.

6515 Vacuum Tubes and Semi-conductor

Applications

3 6 6

Materials to be covered include power supply circuits, basic amplifiers, basic oscillator circuits, audio systems, FM transmitters and receivers.

6527 Solid State I

5 0 5

The student is introduced to the theory and application of solid state devices.

6528 Solid State II

5 0 5

Solid State II is a continuation of Solid State I (6527), with emphasis placed on amplifiers, switching circuits and special applications.

6529 Solid State III

5 0 5

Solid State III is a continuation of Solid State II (6528), with special emphasis on logic circuits, binary and actual numbers, binary code, and Boolean algebra.

6530 Radio and TV I

3 6 6

The most basic theory and trouble symptoms in the operation of AM receivers using tubes are covered as well as transistor-radio circuitry. Emphasis will be placed on the funda-

mental operating principles of the AM receiver. An introduction will be given to the operation of FM receivers.

6531 Radio and TV II

3 6 6

FM theory and operations and trouble analysis using tubes and transistors will be stressed. Black and white television receivers in block diagram form will be introduced.

6532 Radio and TV III

3 6 6

This course is a continuation of the circuit operation of black and white television. Alignment and circuit trouble shooting will be stressed. An introduction will be given to color television in block diagram form. Prerequisite: 6531.

6533 Radio and TV IV

3 6 6

This course consists of an in-depth study of color television circuit configurations. The use of test equipment in trouble shooting and alignment will be emphasized.

6535 Recording Systems

3 6 6

Operational principles of both audio and video tape recording systems will be covered. Maintenance, alignment and operation will be stressed. Mechanical trouble shooting will be introduced.

6537 Professional Certification

6 0 6

The course is an in-depth study of those elements that a technician should know to become a certified technician.

6540 Trouble Shooting Techniques I

1 4 3

The techniques of logical trouble shooting of electronic circuits and simple systems will be studied. Emphasis will be placed on signal tracing and signal injection methods.

6541 Trouble Shooting Techniques II

1 4 3

A continuation of Trouble Shooting Techniques I (6540). This course will emphasize logic applied to signal injection and signal tracing in more complex electronic systems. Emphasis will be placed on the location of malfunctions.

6542 Electronic Shop Processes I

1 4 3

This course is designed to introduce the student to the use of common hand tools, test equipment and other general instruments used in the installation and construction of electronic equipment. Emphasis will be placed on reliable electrical connection techniques, wiring, lacing, and chassis layout and construction.

6543 Electronic Shop Processes II

3 0 3

The actual layout, building, trouble shooting and testing of simple electronic devices, such as power supplies and one or two stage amplifiers will be covered. The object of this course is to increase the student's knowledge of the theory, construction and design of electronic equipment and to allow him to acquire sufficient mechanical skill to successfully install, repair and construct equipment.

6545 Electrical Shop Processes

1 2 2

This course introduces the student to the types of race-ways, connectors, insulators, and tools common to electricians' work. Use of drills, conduit punches, hole saws, conduit bending equipment, splicing, soldering and solderless connection techniques are stressed.

6581 Industrial and Commercial Wiring

3 4 5

Wiring methods and materials are introduced in conformance with the National Electrical Code. Lighting, heating, and motor wiring are studied and the related calculations applied to specific installations.

6585 Industrial Control Circuits**3 6 6**

Electronic devices are introduced with emphasis on practical control applications rather than engineering parameters. Thyratrons, SCR, regulator tubes, Zener Diodes, Thermistors, and Photo-effect devices are typical of those used. Ability to follow the related schematic drawings is stressed. "Packaged" electronic control systems are discussed.

6602 Automotive Mechanics I**6 0 6**

Basic theory and principles of automobiles are studied including tune-up and carburetion, brakes and steering, balancing and alignment.

6603 Automotive Drawing Interpretation**1 3 2**

The student will develop his ability to interpret automotive drawings, to make functional working sketches, and to understand the relation between drawings, basic trade theory, and shop operations. The instruction applies to engine assembly, cooling system, oil lubrication system, fuel system, frames and front end clutch assembly, transmission, rear-end assembly, brake assembly, and lubrication and electrical systems.

6605 Tune Up and Fuel Systems**2 8 6**

The operational principles of the automotive engine and the components that support good performance are studied. The laboratory is used for diagnosis and evaluation. Carburetion principles and the repair of various types of carburetors are covered as part of this course.

6607 Automobile Engines**2 8 6**

This course is designed to familiarize students with tools, machines, and equipment needed for the rebuilding of the automotive internal combustion engine. Theory, construction, design, diagnosis, disassembly, repairing, testing, and reassembly are stressed throughout the course. Emphasis is

placed on work skills and proficiency throughout the laboratory practices.

6608 Internal Combustion Engines

1 4 3

This course covers internal combustion engines including construction, theory of operation, characteristics, diagnosing of malfunctions of engines and accessories and minor repairs.

6609 Automotive Control Systems

2 8 6

Operation, theory and maintenance of all units that control the automobile are studied with emphasis on brakes, steering and balancing.

6610 Automotive Air Conditioning

2 2 3

The student studies the theory, operation and maintenance of air conditioning as it is applied to automotive vehicles.

6611 Automotive Area Specialization

2 8 3

This course is designed to make the student occupationally competent in an area of specialization that he chooses. He will spend 110 hours in one of the following: general service, heavy repair, tune-up and fuel systems, transmission and drive lines and brakes, steering and alignment.

6612 Related Automotive Mechanics I

0 8 4

This course is designed to provide an auto body repair student with enough auto mechanics knowledge to enable him to work effectively on the body.

6613 Automotive Power Systems

2 8 6

The theory, operation, repair and trouble shooting of the power train of vehicles as it leaves the engine and is deliver-

ed at the wheels is studied. Components covered are clutches, transmissions, drive lines, differentials, axles and wheels.

6615 Differentials and Drive Lines

5 0 5

The theory, operation, repair, and trouble shooting on drive lines and axle assemblies are taught. Emphasis is placed on skill in correction of the problems common to differentials, drive lines, and axles.

6617 Automotive Electrical Systems

2 8 6

The principles of electrical systems used in the automotive industry are studied. The detailed operation and repair of batteries, starters, distributors, generators, alternators, and regulators are observed and practiced in the laboratory. Emphasis is placed on the diagnosis and repair of the auto ignition system including transistorized components.

6630 Solid State IV

5 0 5

This course brings together many applications of the basic digital electronics and transistor fundamentals learned in solid state courses to date. Basic electronic counters, special counters and registers, and magnetic devices are examined.

6632 Automotive Body I

2 8 6

An introduction to automotive body and frame work.

6633 Automotive Body II

2 8 6

A continuation of Auto Body I. Work is done on actual fenders, doors, trunk lids, and hoods. Each part is removed, repaired, masked, painted, and reassembled. Instruction is given in the principles of each operation and use of each tool or machine. Portable power tools and safety are emphasized. Alignment of doors and other openings are covered as a part of reassembly. Skill and speed in per-

forming the tasks are carefully checked.

6634 Automotive Body III

2 8 6

A continuation of Auto Body II. Preparation is made for repairing major wrecked automobiles. Procedures of repairing the frame and alignment of the wheels and axles are studied prior to performing the tasks on wrecked autos. Repair and replacement of roofs, quarter panels, windshield pillar posts, hinge and center posts, doors and rocker panels, trunk lids, and tailgates, and restoring of total wrecks are taught.

6635 Body and Chassis Alignment

1 4 3

This course covers the alignment of body panels for proper fit and finish. It also covers the measurement of chassis alignment in the areas of front suspension, rear axle and frame, and the correction of misalignments.

6640 Related Automotive Body

1 6 4

Welding of metals, metal forming, automobile-truck body and frame structure, repairing principles and safety practices are studied.

6650 Introduction to Diesel Service

4 0 4

The operational principles and servicing of diesel engines are studied. Limited laboratory experience provides and supports the theory covered.

6652 Diesel Mechanics I

2 8 6

Safety as related to the diesel engine and equipment is stressed. The diesel engine and accessories as they are similar and dissimilar to the other internal combustion engines are studied. Tools and test equipment, as well as terminology of the diesel mechanic, are incorporated. Most work is done on stationary lab engines.

6653 Diesel Mechanics II

2 8 6

This course is considered an intermediate course. The student transfers to the in-the-field equipment that is brought in for repair and service. Diagnosis is required and repairs made as necessary.

6654 Diesel Mechanics III

2 8 6

This course is almost total laboratory experience. The advanced student continues to work on diesel equipment from the field, but now repairs all component parts as required. These will include clutches, transmissions, differentials, hydraulic systems, air systems, and preventative maintenance to each.

6662 Automotive and Diesel Service

1 4 3

An understanding of the role and function of an automotive service manager is covered. The responsibility of each member of the staff and the procedures of completing the servicing of customer's automobiles and diesels are studied. The laboratory facilities provide the opportunity to get limited practice.

6664 Parts Department Practice

4 0 4

An opportunity to study the procedures for supplying, ordering, cataloging parts is offered.

6670 Diesel Drawing Interpretations

1 4 3

This course is especially oriented to tracing and interpreting drawings of the fuel systems, air systems, and hydraulic systems specifically applicable to diesel engine and auxiliary control applications.

6716 Thermodynamics

3 0 3

The course covers the basic theory of thermodynamics,

which deals with the study of energy, energy transfer, and the media employed for the transfer of energy. The theory is coordinated with engineering practices and will show the theory of operation of internal-combustion engines, air compressors, steam engines, and turbines.

6801 Introduction to Machine Shop

0 6 3

Selected operations are used to develop some skill and understanding in the use of basic machine tools as they apply to the related trade.

6802 Basic Machine Shop

1 10 6

This course introduces students to machines, techniques and processes.

6803 Interpretation of Technical Diagramming and Tables

3 0 3

Skills are developed to the point where the student can diagram systems and controls satisfactorily for understanding and interpretation. Common templates and simplified methods are stressed where possible. Mathematical tables are emphasized.

6840 Machine Processes

2 6 5

This is an advanced course designed to introduce students to new machine developments, techniques, and processes. Consideration of material and accuracy requirements as they relate to new products and machines will enable the student to select the proper machining sequence for economy and precision.

6851 Mechanical and Process Lubrication

3 0 3

All methods and processes of lubrication of machines are studied. Diagnosing and repair are stressed.

6852 Machine Repair I**2 4 4**

The learner is instructed in the skills of machine tools commonly used to produce new and reconditioned parts for machines under repair. Proficiency is gained in the use of basic machine tools in repairing work and damaged components of machine tools in repair.

6853 Machine Repair II**2 4 4**

Advanced skills are developed in machine repair. Students work on assigned repair problems as a group with individuals assuming responsibility for a specific part of the job.

6860 Diagnosis and Repair I**2 4 4**

This is a practical application course in industrial wiring methods and design including circuit and conductor calculations, motor circuits and controls, transformer and entrance layouts, illumination design, heating and air-conditioning, machine tool hook-up and circuiting. The National Electrical Code is introduced as it applies to the field.

6861 Diagnosis and Repair II**2 4 4**

Projects and actual installation and trouble shooting of live work are used to strengthen the basic skills previously learned. Group activities emphasize the team approach to problem areas.

6865 Industrial Hydraulics**4 0 4**

The fundamentals of fluid power and the components are covered as to principle, function, terminology, repair and use. Study of machine tool circuits is used to make application.

6881 Tool and Die Making I**2 8 6**

The student receives an introduction to machine tools, their design, applications, tooling, set up and operation with specific emphasis on the latest developments in high speed and high production of metallic and non-metallic parts including numerically controlled automated machinery.

6882 Tool and Die Making II

2 8 6

The student studies manufacturing methods and foundry practice, including an introduction to die casting, aluminum extruding, forging, stamping, forming, plastic extruding, compression and transfer molding, hot and cold metal working, transfer equipment, and basic principles of automation.

6901 Welding for Related Trades I

2 4 4

This course is an introduction to the area of arc and oxy-acetylene welding. The fundamental principles of joining ferrous metals are studied and demonstrated. Basic welding processes, equipment operation, and safety procedures are practiced in the laboratory work. Emphasis is given to welding procedures and practice in the major area of work such as machine shop, automotive, and sheet metal.

6902 Welding for Related Trades II

1 8 5

A continuation of Welding for Related Trades I (6901).

6905 Record Keeping and Business Economics

2 0 2

This course teaches the reasons for and methods of basic record keeping in both the technical areas of well construction and pump installation and for the sound business practice of cost accounting. Basic economic theory behind the establishment of a reasonable profit-making business plan is taught with emphasis on the production of a highly valued product or service.

6910 Welding I**2 8 6**

This course provides the opportunity for each student, in a general and comprehensive way, to learn the electric arc welding processes and to give each student a basic understanding of the principles involving safety, machines, electrodes, and metals.

6911 Welding II**2 8 6**

The student learns to weld metals and alloys and studies the mechanical properties of steel and alloys, the expansion, contraction, and shrinkage of metals, and the sizes of welds and their strength.

6912 Welding III**2 8 6**

The student is provided with a comprehensive view of all welding processes, historical background, fundamentals of the process, equipment, applications and economics of each process.

6942 Welding Trouble Shooting**4 0 4**

Construction, operation, maintenance, and trouble shooting of welding equipment will be covered. Evaluation of welding procedures, analyzing of the problems, recommendations and testing for improved welds will be covered.

**7000 Drilling Equipment: Operation &
Maintenance****3 4 5**

This course offers both the classroom and the "hands on" approach in the prescribed methods of operation and maintenance for the fundamental tools and equipment utilized in the construction and development of a ground water supply.

7005 Hydrogeology for Well Drillers**4 0 4**

This will be a basic introduction to geology as it relates to

underground water and its occurrence, characteristics, behavior and movement beneath the earth's surface. The hydrologic cycle will be analyzed, including the continuous movement of water from ocean to the sky through evaporation, back to the land surface as rain, into the underground and finally back to the ocean. This course presents an overall view of a complex technical subject in a simplified manner with concentration on the basic principles as they relate to water well construction.

7010 Pump Theory and Maintenance (Water Well Systems)

3 2 4

This course will deal with the functional theory and installation techniques necessary for the operation of domestic, industrial and municipal pumping systems. Basic physical principles behind various pumping methods will be studied along with the procedures which must be followed for determination of pump size and type for particular job requirements. A "hands on" approach will be followed in pump installation training wherein students will unpack, install, align, test, maintain and repair pumping equipment.

7015 Water Conditioning Requirements and Systems

2 0 2

The student will learn the need for and benefits of conditioned and treated water, both for human consumption and industrial applications. Various methods and types of equipment required to condition water will be studied and evaluated. The course will provide basic knowledge of water conditioning for domestic, commercial, industrial and municipal applications, covering such subjects as the elimination of bacteria and the reduction of iron, sulphur, phosphate, salinity and water hardness.

7020 Well Construction, Development and Maintenance

4 0 4

This course will deal with the basic methods of well construction including cable tool, rotary, reverse rotary, as well as jetting, boring and augering. The relationship be-

tween the various drilling methods and the subsurface geologic conditions encountered will be studied. Emphasis will be placed on development of wells for optimum water production and proper maintenance to insure continuity and longevity of the water supply.

**7025 Field Drilling, Site Selection, Setup &
 Operation**

2 4 4

This course is designed to teach the operation of all types of water well drilling equipment under field conditions. The total program will include drill site selection with emphasis on proper location in relationship to availability of water, operational safety, ease of machine setup as well as service of the completed well.

7030 Sanitary Aspects of Water Well Technology

2 0 2

Construction techniques critical to the elimination of sources of potential pollution of the water entering the water bearing strata or the well itself will be taught. Such items as proper welding, coupling, seating, cementing, grouting, and capping of well casing will be discussed with emphasis on the prevention of polluted surface water from travelling down the outside of the casing and thence into the well. Emphasis will also be placed on sterilization of all drilling tools and initial chlorination of new wells in order to inhibit bacterial growth. Well construction codes established by state health departments will be described.

7500 Problem Seminar

1-5 2-10 0

This is an open laboratory class in which the student pursues supervised study in his occupational field. Problems are assigned by the department chairman. The course may be utilized in each region at the discretion of the department chairman.



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